

CATALOG S-48

ARMSTRONG TOOLS



ARMSTRONG BROS. TOOL CO.

"THE TOOL HOLDER PEOPLE"

5200-5300 W. ARMSTRONG AVENUE • CHICAGO 30, ILLINOIS

U. S. A.

IMPORTANT

Prices herein shown are for estimating purposes only. Contact either your distributor or us for net prices representing your cost.

ARMSTRONG BROS. TOOL CO.

Chicago 30, U.S.A.

ARMSTRONG BROS. TOOL CO.

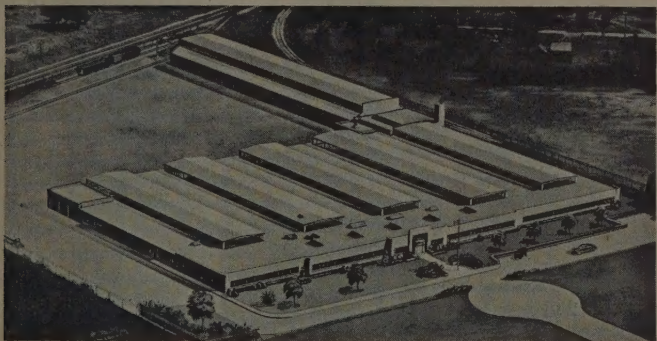
FOUNDED IN 1890

The Trade Mark



of Quality

500



*The New Modern Plant and General Offices
of*

ARMSTRONG BROS. TOOL CO.

5200-5300 W. ARMSTRONG AVENUE

CHICAGO 30, ILLINOIS, U.S.A.

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MANUFACTURERS OF

TOOL HOLDERS, TURRET LATHE AND SCREW MACHINE TOOLS, BITS, BLADES, CUTTERS, AND
HIGH SPEED STEEL, MACHINE SHOP SPECIALTIES, LATHE AND MILLING MACHINE DOGS,
CLAMPS, RATCHET DRILLS AND DRILLING POSTS, WRENCHES BOTH OPEN END AND SOCKET
AND "ARMSTRONG BROS." PIPE TOOLS.



ARMSTRONG BROS. TOOL CO., CHICAGO, U. S. A.

GRAND PRIZE WINNERS

ARMSTRONG Tools have won highest honors at every great exposition entered, from the Universal Exposition at Paris in 1900 to the present day—thus confirming the favorable judgment of practical machinists based upon many years satisfactory service.



Universal Exposition
Paris, 1900
Two Bronze Medals
Highest Award



World's Fair
St. Louis, 1904
Gold Medal
Highest Award

GRAND PRIZE



MEDAL OF HONOR

Panama-Pacific International
Exposition, San Francisco
1915
The Two Highest Awards
Conferred



Universal Exposition
Liege, 1905
Bronze Medal
Highest Award



Franklin Institute
Medal of Merit

TRADE



MARK

ARMSTRONG

TRADEMARK

REG. IN U. S. PAT. OFFICE

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CATALOG S-48

PLEASE NOTE

This catalog S-48 supersedes all previous editions which are hereby withdrawn. Prices are subject to change without notice.

WHEN ORDERING specify our catalog numbers.

TERMS CASH—Payable in Chicago par funds. Unless otherwise specified all quotations are based upon delivery free on board cars at Chicago and our responsibility ceases when such delivery is effected.

DEALERS' CATALOGS—Cuts will be furnished free to dealers for use in their catalogs and, if desired, we will aid in preparing copy and correcting proofs; we do not pay for catalog space.

PRINTED MATTER FURNISHED DEALERS—We will furnish a reasonable supply of printed matter free to dealers who stock ARMSTRONG Tools.

DIMENSIONS—All dimensions are shown in inches unless otherwise stated.

GUARANTEE—Every ARMSTRONG Tool is guaranteed against defective material and workmanship.

Man—
Without tools he is nothing
with tools he is all.
Thomas Carlyle



ALPHABETICAL INDEX

OF

ARMSTRONG TOOLS and ARMSTRONG BROS. PIPE TOOLS

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THE ARMSTRONG SYSTEM OF TOOL HOLDERS

A Complete, Economical and Efficient System



of High Speed Lathe and Planer Tools

The ARMSTRONG System

The "ARMSTRONG System" provides superior tools for every operation on Lathes, Planers, Slotters and Shapers and for most standard operations on Turret Lathes and Screw Machines.

The ARMSTRONG Design Principle

All ARMSTRONG Tool Holders incorporate the basic ARMSTRONG principle of permanent multi-purpose drop forged shanks or tool holders which hold inserted cutters ground from standard high speed steel shapes.

Ends "Tooling-up" Delays

Today in modern shops men and machines do not stand idle waiting while the "tool dresser" forges out a cumbersome single purpose tool for each operation. Nor are men and machines stopped to wait for the "tool dresser" to reform, retemper and re-grind the tool whenever it becomes dull. Today every machine tool operator is his own "tool dresser"—quickly grinds his own cutter

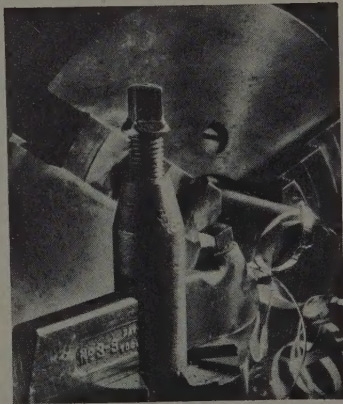
bits from stock shapes of high speed steel; quickly resharpens them.

With ARMSTRONG Tool Holders, setting-up is reduced to choosing the cutter, inserting it in the toolholder, adjusting clearance and tightening the set screw.

"SAVES: All Forging, 70% Grinding, 90% High Speed Steel"

With ARMSTRONG Tool Holders for every operation all tool forging is eliminated. Grinding is reduced from 70 to 80 per cent—instead of the over all grinding away of a cumbersome solid tool,

only the actual cutting point is ground—the tip of a cutter bit. Where before large stocks of valuable high speed steels had to be maintained from which to forge tools, and many pounds of this costly steel tied up in innumerable single purpose tools of endless sizes and shapes, now the same work can be done with cutter bits and blades that weigh but a few ounces. High Speed Steel consumption is reduced 90% and any given stock of high speed steel will go 10 times as far



because each ounce of high speed steel used in an ARMSTRONG Tool Holder is effectively equal to 10 ounces used in a bar tool.

Each Tool Holder Equals a Complete Set of Forged Tools

Taking innumerable cutters ground to many shapes each ARMSTRONG Tool Holder will do the work of a complete set of forged tools. A single ARMSTRONG Turning Tool, for example, can hold cutters ground to all the standard cutter shapes—for right or left turning, corner work, finishing, threading, etc.

A Correct Tool Holder for Each Operation

There is a *correct* ARMSTRONG Tool Holder provided for every operation—a tool holder designed to give the greatest strength, the maximum clearance, to hold the cutter at the correct cutting angle . . . to be in every way the most efficient tool that can be made for that specific operation. True efficiency is best obtained by using the correct ARMSTRONG Tool Holder for each operation.

Permits Higher Speeds and Heavier Feeds

Cutting speeds generally accepted as "standard" are no measure of modern machine tool or tool holder capacities. They are largely "rule of thumb" speeds carried over from forged tool days. With the correct ARMSTRONG Tool Holder safe speeds and feeds are usually limited only by the power of the machine tool itself.

A little experimenting in cutting speeds will often reveal ways to greatly increase the output of your present machine tools.

Most Efficient Tools Available, Most Economical

Designed with a full knowledge of machine tool requirements gained from over 50 years of specialization in the design, manufacture and sale of ARMSTRONG

Tool Holders . . . embodying the refinements in material and design developed through long and continuous research and test, and the experience gained through world wide use, ARMSTRONG Tool Holders are the most efficient tools obtainable.

Produced by modern manufacturing methods they have a strength, uniformity and accuracy of form and inherent quality impossible to individually forged tools. Supplied in quantity to a worldwide market, sold by all leading supply houses and industrial tool departments, they cost so little that they are usually "paid-off" in their first use . . . yet they give years and years of service.

Governs the Efficiency of the Machine Tool

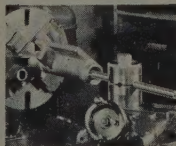
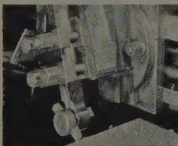
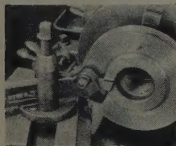
The actual work of any machine tool is done by its cutting point. And, no machine tool can be more efficient than its cutter and the tool holder that holds it.

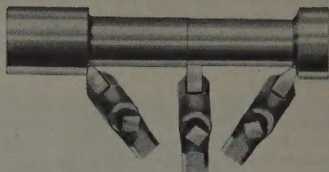
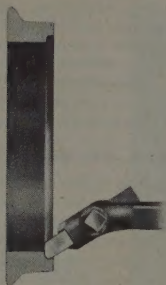
With the cost of any ARMSTRONG Tool Holder so insignificant when compared to the cost of the machine hours and man-hours whose efficiency it governs, the only sound shop practice is to always use the correct type and size ARMSTRONG Tool Holder for every operation on every lathe, planer, slotter and shaper and wherever possible on all turret lathes and screw machines.

New ARMSTRONG Tool Holders

While over 96% of the machine shops and tool rooms use ARMSTRONG Tool Holders, many do not use the correct tool holders for all operations. This is due in part to habit and to lack of familiarity with the newer ARMSTRONG Tool Holders recently developed to meet modern machining conditions and materials.

It is a good shop practice, therefore, to periodically check your tooling equipment against an up-to-the-minute ARMSTRONG Tool Holder catalog, to be sure that your tooling methods are keeping up with developments in this field.

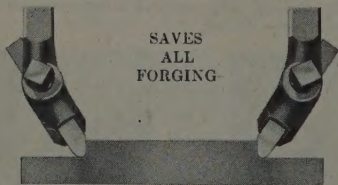




ONE ARMSTRONG TOOL HOLDER

with a few cutters which can be cheaply and quickly made from standard tool bits by any machinist will do any job on the lathe or shaper; roughing, facing, finishing corner and fillet work.

Effectively equals a dozen forged tools.



SAVES
ALL
FORGING

Makes one pound of High
Speed Tool Steel equal 10
pounds in Forged Tools.

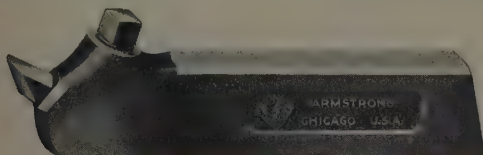
The ARMSTRONG Tool Holder System comprises ARMSTRONG Tool Holders for every operation on lathes, planers, slotters and shapers and for standard operations of turret lathe and screw machines.



ARMSTRONG TURNING TOOL HOLDERS

Straight Shank

ARMSTRONG Turning Tool Holders are drop forged from a special steel and are accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.



Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter Square	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
000-S	5/16 x 1/2 x 4	3/16	6 to 7" Swing	1/2	\$4.30	000-S
00-S	5/16 x 3/4 x 4 1/4	3/16	7 to 10" Swing	11/16	4.30	00-S
0-S	3/8 x 7/8 x 5	1/4	10 to 12" Swing	13/16	4.55	0-S
1-S	1/2 x 1 1/8 x 6	5/16	14 to 16" Swing	1 1/16	5.20	1-S
2-S	5/8 x 1 3/8 x 7	3/8	16 to 18" Swing	1 1/4	6.40	2-S
3-S	3/4 x 1 5/8 x 8	7/16	18 to 20" Swing	1 15/32	8.65	3-S
4-S	7/8 x 1 3/4 x 9	1/2	24 to 36" Swing	1 21/32	11.00	4-S
5-S	1 x 2 x 11	5/8		2	15.60	5-S
6-S	1 1/4 x 2 1/4 x 13	3/4		2 7/16	21.60	6-S
7-S	1 1/2 x 2 1/2 x 16	7/8		2 13/16	36.00	7-S
750-S	1 5/8 x 2 3/4 x 18	1		3 1/8	52.80	750-S
800-S	1 3/4 x 3 x 20	1 1/8		3 3/8	68.40	800-S

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

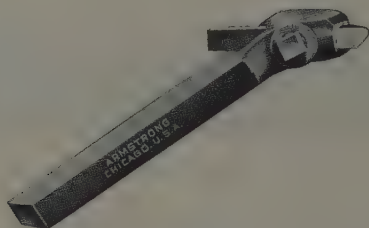
For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG TURNING TOOL HOLDERS

Left Hand Off-Set

ARMSTRONG Left Hand Off-Set Turning Tool Holders are drop forged from a special steel and are accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.



Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter Square	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
000-L	5/16 x 1/2 x 4	3/16	6 to 7" Swing	1/2	\$4.30	000-L
00-L	5/16 x 3/4 x 4 1/2	3/16	7 to 10" Swing	11/16	4.30	00-L
0-L	3/8 x 7/8 x 5	1/4	10 to 12" Swing	13/16	4.55	0-L
1-L	1/2 x 1 1/8 x 6	5/16	14 to 16" Swing	1 1/16	5.20	1-L
2-L	5/8 x 1 3/8 x 7	3/8	16 to 18" Swing	1 1/4	6.40	2-L
3-L	3/4 x 1 5/8 x 8	7/16	18 to 20" Swing	1 15/32	8.65	3-L
4-L	7/8 x 1 3/4 x 9	1/2	24 to 36" Swing	1 21/32	11.00	4-L
5-L	1 x 2 x 11	5/8		2	15.60	5-L
6-L	1 1/4 x 2 1/4 x 13	3/4		2 7/16	21.60	6-L
7-L	1 1/2 x 2 1/2 x 16	7/8		2 13/16	36.00	7-L
750-L	1 5/8 x 2 3/4 x 18	1		3 1/8	52.80	750-L
800-L	1 3/4 x 3 x 20	1 1/8		3 3/8	68.40	800-L

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG TURNING TOOL HOLDERS

Right Hand Off-Set

ARMSTRONG Right Hand Off-Set Turning Tool Holders are drop forged from a special steel and are accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.



Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter Square	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
000-R	5/16 x 1/2 x 4	3/16	6 to 7" Swing	1/2	\$4.30	000-R
00-R	5/16 x 3/4 x 4 1/2	3/16	7 to 10" Swing	11/16	4.30	00-R
0-R	3/8 x 7/8 x 5	1/4	10 to 12" Swing	13/16	4.55	0-R
1-R	1/2 x 1 1/8 x 6	5/16	14 to 16" Swing	1 1/16	5.20	1-R
2-R	5/8 x 1 3/8 x 7	3/8	16 to 18" Swing	1 1/4	6.40	2-R
3-R	3/4 x 1 5/8 x 8	7/16	18 to 20" Swing	1 15/32	8.65	3-R
4-R	7/8 x 1 3/4 x 9	1/2	24 to 36" Swing	1 21/32	11.00	4-R
5-R	1 x 2 x 11	5/8		2	15.60	5-R
6-R	1 1/4 x 2 1/4 x 13	3/4		2 7/16	21.60	6-R
7-R	1 1/2 x 2 1/2 x 16	7/8		2 13/16	36.00	7-R
750-R	1 5/8 x 2 3/4 x 18	1		3 1/8	52.80	750-R
800-R	1 3/4 x 3 x 20	1 1/8		3 3/8	68.40	800-R

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

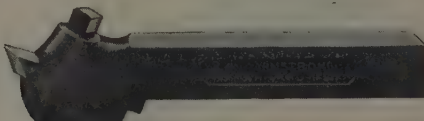
For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG DROP-HEAD TOOL HOLDERS

Straight Shank

ARMSTRONG Drop Head Turning Tool Holders are designed especially for use on lathes of British and European make having a clamp tool rest, and American lathes of similar design with high slide rest or low centers. The head and screw are extra heavy and the "goose-neck" shape of holder makes it an excellent shaper and planer tool.



Drop forged from special steel, accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter Square	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
100-S	1/2 x 5/8 x 6	3/16	9/16	4.30	100-S
101-S	5/8 x 3/4 x 7 1/2	1/4	11/16	4.55	101-S
201-S	3/4 x 7/8 x 8 1/2	5/16	13/16	5.20	201-S
102-S	7/8 x 1. x 9 1/2	3/8	15/16	6.40	102-S
301-S	1 x 1 1/8 x 10 1/2	7/16	1 1/16	8.65	301-S
103-S	1 1/8 x 1 1/4 x 11 1/2	1/2	1 3/16	11.00	103-S
104-S	1 3/8 x 1 1/2 x 13 1/2	5/8	1 5/16	15.60	104-S
105-S	1 5/8 x 1 3/4 x 15 1/2	3/4	1 1/2	21.60	105-S
106-S	1 7/8 x 2 x 17 1/2	7/8	1 3/4	36.00	106-S
107-S	2 1/8 x 2 1/4 x 19 1/2	1	2	52.80	107-S

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG DROP-HEAD TOOL HOLDERS

Left Hand Off-Set

ARMSTRONG Drop-Head Turning Tool Holders are designed especially for use on lathes of British and European make having a clamp tool rest, and American lathes of similar design with high slide rest or low centers. The head and screw are extra heavy and the "goose neck" shape of holder makes it an excellent shaper and planer tool.



Drop forged from special steel, accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter Square	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
100-L	1/2 x 5/8 x 6	3/16	9/16	4.30	100-L
101-L	5/8 x 3/4 x 7 1/2	1/4	11/16	4.55	101-L
201-L	3/4 x 7/8 x 8 1/2	5/16	13/16	5.20	201-L
102-L	7/8 x 1 x 9 1/2	3/8	15/16	6.40	102-L
301-L	1 x 1 1/8 x 10 1/2	7/16	1 1/16	8.65	301-L
103-L	1 1/8 x 1 1/4 x 11 1/2	1/2	1 3/16	11.00	103-L
104-L	1 3/8 x 1 1/2 x 13 1/2	5/8	1 5/16	15.60	104-L
105-L	1 5/8 x 1 3/4 x 15 1/2	3/4	1 1/2	21.60	105-L
106-L	1 7/8 x 2 x 17 1/2	7/8	1 3/4	36.00	106-L
107-L	2 1/8 x 2 1/4 x 19 1/2	1	2	52.80	107-L

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG DROP-HEAD TOOL HOLDERS

Right Hand Off-Set

ARMSTRONG Drop-Head Turning Tool Holders are designed especially for use on lathes of British and European make having a clamp tool rest, and American lathes of similar design with high slide rest or low centers. The head and screw are extra heavy and the "goose neck" shape of holder makes it an excellent shaper and planer tool.



Drop forged from special steel, accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter Square	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
100-R	1/2 x 5/8 x 6	3/16	9/16	4.30	100-R
101-R	5/8 x 3/4 x 7 1/2	1/4	11/16	4.55	101-R
201-R	3/4 x 7/8 x 8 1/2	5/16	13/16	5.20	201-R
102-R	7/8 x 1 x 9 1/2	3/8	15/16	6.40	102-R
301-R	1 x 1 1/8 x 10 1/2	7/16	1 1/16	8.65	301-R
103-R	1 1/8 x 1 1/4 x 11 1/2	1/2	1 3/16	11.00	103-R
104-R	1 3/8 x 1 1/2 x 13 1/2	5/8	1 5/16	15.60	104-R
105-R	1 5/8 x 1 3/4 x 15 1/2	3/4	1 1/2	21.60	105-R
106-R	1 7/8 x 2 x 17 1/2	7/8	1 3/4	36.00	106-R
107-R	2 1/8 x 2 1/4 x 19 1/2	1	2	52.80	107-R

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG "C-A" TOOL HOLDERS

Straight Shank For Cast Alloy Cutter Bits

In ARMSTRONG "C-A" Tool Holders the cutter is held parallel to the shank of the holder which permits grinding to the correct rake and clearance and affords maximum support to the cutting edge.

The set screw pressure is distributed over a large area by means of a heavy tool steel gib movably set between cutter and screw point. This feature is combined with the usual ARMSTRONG qualities of great strength and compactness.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

Each tool is boxed separately and is furnished WITHOUT cutter. Wrench is included.

For ARMALLOY Cutter Bits and "C-A" Tool Sets see pages 57 and 58.

No.	Size of Holder	Size of Cutter Square	Length of Cutter	For Lathes Approximate Size*		Nominal Height from Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
X-0-S	3 8 x 15/16 x 5 1/2	1/4	2 1/8	9 & 10"	Swing	11/16	\$8.50	X-0-S
X-1-S	1 2 x 1 1/4 x 7	5/16	2 1/2	11, 12, 13, 14"	Swing	1 1/16	9.85	X-1-S
X-2-S	5 8 x 1 1/2 x 7 7/8	3/8	3	14 & 16"	Swing	1 1/4	11.70	X-2-S
X-3-S	3 4 x 1 3/4 x 8 7/8	7/16	3 1/2	16"	Swing	1 3/8	15.60	X-3-S
X-4-S	7 8 x 1 7/8 x 9 7/8	1/2	4	18"	Swing	1 3/4	21.50	X-4-S
X-5-S	1 x 2 1/8 x 11 3/4	5/8	4 1/2	20 & 24"	Swing	1 7/8	28.55	X-5-S

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMALLOY Cutter Bits (see page 57).



ARMSTRONG "C-A" TOOL HOLDERS

Left Hand Off-Set For Cast Alloy Cutter Bits

In ARMSTRONG "C-A" Tool Holders the cutter is held parallel to the shank of the holder which permits grinding to the correct rake and clearance and affords maximum support to the cutting edge.

The set screw pressure is distributed over a large area by means of a heavy tool steel gib movably set between cutter and screw point. This feature is combined with the usual ARMSTRONG qualities of great strength and compactness.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

Each tool is boxed separately and is furnished WITHOUT cutter. Wrench is included.

For ARMALOY Cutter Bits and "C-A" Tool Sets see pages 57 and 58.

No.	Size of Holder	Size of Cutter Square	Length of Cutter	For Lathes Approximate Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
X-0-L	3/8x 15/16x .51/2	1/4	2 1/8	9 and 10" Swing	11/16	\$ 8.50	X-0-L
X-1-L	1/2x1 1/4 x 7	5/16	2 1/2	11, 12, 13, 14" Swing	1 1/16	9.85	X-1-L
X-2-L	5/8x1 1/2 x 7 7/8	3/8	3	14 and 16" Swing	1 1/4	11.70	X-2-L
X-3-L	3/4x1 3/4 x 8 7/8	7/16	3 1/2	16" Swing	1 3/8	15.60	X-3-L
X-4-L	7/8x1 7/8 x 9 7/8	1/2	4	18" Swing	1 3/4	21.50	X-4-L
X-5-L	1 x2 1/8 x11 3/4	5/8	4 1/2	20 and 24" Swing	1 7/8	28.55	X-5-L

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMALOY Cutter Bits (see page 57).



ARMSTRONG "C-A" TOOL HOLDERS

Right Hand Off-Set For Cast Alloy Cutter Bits

In ARMSTRONG "C-A" Tool Holders the cutter is held parallel to the shank of the holder which permits grinding to the correct rake and clearance and affords maximum support to the cutting edge.

The set screw pressure is distributed over a large area by means of a heavy tool steel gib movably set between cutter and screw point. This feature is combined with the usual ARMSTRONG qualities of great strength and compactness.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point.

Each tool is boxed separately and is furnished WITHOUT cutter. Wrench is included.

For ARMALLOY Cutter Bits and "C-A" Tool Sets see pages 57 and 58.

No.	Size of Holder	Size of Cutter Square	Length of Cutter	For Lathes Approximate Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
X-0-R	3/8x 15/16x 5 1/2	1/4	2 1/8	9 and 10" Swing	11/16	\$ 8.50	X-0-R
X-1-R	1/2x 1 1/4 x 7	5/16	2 1/2	11, 12, 13, 14" Swing	1 1/16	9.85	X-1-R
X-2-R	5/8x 1 1/2 x 7 7/8	3/8	3	14 and 16" Swing	1 1/4	11.70	X-2-R
X-3-R	3/4x 1 3/4 x 8 7/8	7/16	3 1/2	16" Swing	1 3/8	15.60	X-3-R
X-4-R	7/8x 1 7/8 x 9 7/8	1/2	4	18" Swing	1 3/4	21.50	X-4-R
X-5-R	1 x 2 1/8 x 11 3/4	5/8	4 1/2	20 and 24" Swing	1 7/8	28.55	X-5-R

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMALLOY Cutter Bits (see page 57).



ARMSTRONG CARBIDE TOOL HOLDERS

Straight Shank For Carbide-Tipped Cutters

In ARMSTRONG Carbide Tool Holders, the cutter is held parallel to the shank of the holder which permits grinding the cutter so as to give maximum support to the cutting edge. This feature, together with the great rigidity of ARMSTRONG Tool Holders, is recognized by Carbide Engineers as a prerequisite to the successful application of Carbide Cutters. In addition to its primary use with Carbide-Tipped Cutters, this Tool Holder is also widely used as a planer and shaper tool.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point. Furnished with hole broached for either square or heavy duty cutters.

Each tool is boxed separately and is furnished WITHOUT Cutter. Wrench is included.

For Armide Carbide-Tipped Cutters and Tool Sets see pages 59 to 62.

FOR SQUARE CUTTERS

No.	Size of Holder	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
T-0-S	3/8 x 15/16 x 6	1/4	9 & 10" Swing	11/16	\$5.10	T-0-S
T-1-S	1/2 x 1 1/4 x 7	5/16	11, 12, 13, 14", Swing	7/8	5.75	T-1-S
T-2-S	5/8 x 1 1/2 x 8	3/8	14 & 16" Swing	1	7.20	T-2-S
T-3-S	3/4 x 1 3/4 x 9	7/16	16" Swing	1 1/8	9.60	T-3-S
T-4-S	7/8 x 1 7/8 x 10	1/2	18" Swing	1 1/4	12.15	T-4-S
T-5-S	1 x 2 1/8 x 12	5/8	20 & 24" Swing	1 3/8	17.30	T-5-S
T-6-S	1 1/4 x 2 1/4 x 13	3/4		1 9/16	32.50	T-6-S
T-7-S	1 1/2 x 2 1/2 x 16	7/8		2	56.60	T-7-S
T-750-S	1 5/8 x 2 3/4 x 18	1		2 1/4	96.35	T-750-S
T-800-S	1 3/4 x 3 x 20	1 1/8		2 1/2	120.40	T-800-S

FOR HEAVY DUTY CUTTERS

FT-0-S	3/8 x 15/16 x 6	1/4 x 3/8	9 & 10" Swing	11/16	\$6.10	FT-0-S
FT-1-S	1/2 x 1 1/4 x 7	5/16 x 7/16	11, 12, 13, 14" Swing	7/8	7.00	FT-1-S
FT-2-S	5/8 x 1 1/2 x 8	3/8 x 1/2	14 & 16" Swing	1	8.65	FT-2-S
FT-3-S	3/4 x 1 3/4 x 9	7/16 x 9/16	16" Swing	1 1/8	11.50	FT-3-S
FT-4-S	7/8 x 1 7/8 x 10	1/2 x 3/4	18" Swing	1 1/4	14.70	FT-4-S
FT-5-S	1 x 2 1/8 x 12	5/8 x 7/8	20 & 24" Swing	1 3/8	20.65	FT-5-S

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

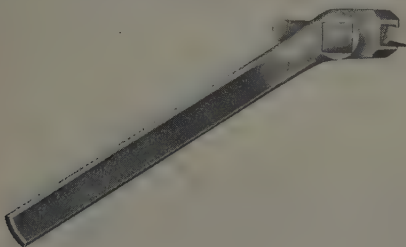
For best results use ARMIDE CARBIDE-TIPPED CUTTERS (see pages 59 to 61).



ARMSTRONG CARBIDE TOOL HOLDERS

Left Hand Off-Set For Carbide-Tipped Cutters

In this Tool Holder, the cutter is held parallel to the shank of the holder which permits grinding the cutter so as to give maximum support to the cutting edge.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point. Furnished with hole broached for either square or heavy duty cutters.

Each tool is boxed separately and is furnished WITHOUT CUTTER. Wrench is included.
For Armide Carbide-Tipped Cutters and Tool Sets see pages 59 to 62.

FOR SQUARE CUTTERS

No.	Size of Holder	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
T-0-L	3/8 x 15/16 x 6	1/4	9 & 10" Swing	11/16	\$5.10	T-0-L
T-1-L	1/2 x 1 1/4 x 7	5/16	11, 12, 13, 14" Swing	7/8	5.75	T-1-L
T-2-L	5/8 x 1 1/2 x 8	3/8	14 & 16" Swing	1	7.20	T-2-L
T-3-L	3/4 x 1 3/4 x 9	7/16	16" Swing	1 1/8	9.60	T-3-L
T-4-L	7/8 x 1 7/8 x 10	1/2	18" Swing	1 1/4	12.15	T-4-L
T-5-L	1 x 2 1/8 x 12	5/8	20 & 24" Swing	1 3/8	17.30	T-5-L
T-6-L	1 1/4 x 2 1/4 x 13	3/4		1 9/16	32.50	T-6-L
T-7-L	1 1/2 x 2 1/2 x 16	7/8		2	56.60	T-7-L
T-750-L	1 5/8 x 2 3/4 x 18	1		2 1/4	96.35	T-750-L
T-800-L	1 3/4 x 3 x 20	1 1/8		2 1/2	120.40	T-800-L

FOR HEAVY DUTY CUTTERS

FT-0-L	3/8 x 15/16 x 6	1/4 x 3/8	9 & 10" Swing	11/16	\$6.10	FT-0-L
FT-1-L	1/2 x 1 1/4 x 7	5/16 x 7/16	11, 12, 13, 14" Swing	7/8	7.00	FT-1-L
FT-2-L	5/8 x 1 1/2 x 8	3/8 x 1/2	14 & 16" Swing	1	8.65	FT-2-L
FT-3-L	3/4 x 1 3/4 x 9	7/16 x 9/16	16" Swing	1 1/8	11.50	FT-3-L
FT-4-L	7/8 x 1 7/8 x 10	1/2 x 3/4	18" Swing	1 1/4	14.70	FT-4-L
FT-5-L	1 x 2 1/8 x 12	5/8 x 7/8	20 & 24" Swing	1 3/8	20.65	FT-5-L

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

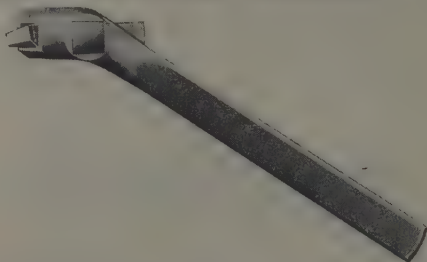
For best results use ARMIDE CARBIDE-TIPPED CUTTERS (see pages 59 to 61).



ARMSTRONG CARBIDE TOOL HOLDERS

Right Hand Off-Set For Carbide-Tipped Cutters

In this Tool Holder, the cutter is held parallel to the shank of the holder which permits grinding the cutter so as to give maximum support to the cutting edge.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The set screws are made of treated alloy steel with hardened point. Furnished with hole broached for either square or heavy duty cutters.

Each tool is boxed separately and is furnished **WITHOUT CUTTER**. Wrench is included.

For Armide Carbide-Tipped cutters and Tool Sets see pages 59 to 62.

FOR SQUARE CUTTERS

No.	Size of Holder	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
T-0-R	3/8 x 15/16 x 6	1/4	9 & 10" Swing	11/16	\$5.10	T-0-R
T-1-R	1/2 x 1 1/4 x 7	5/16	11, 12, 13, 14" Swing	7/8	5.75	T-1-R
T-2-R	5/8 x 1 1/2 x 8	3/8	14 & 16" Swing	1	7.20	T-2-R
T-3-R	3/4 x 1 3/4 x 9	7/16	16" Swing	1 1/8	9.60	T-3-R
T-4-R	7/8 x 1 7/8 x 10	1/2	18" Swing	1 1/4	12.15	T-4-R
T-5-R	1 x 2 1/8 x 12	5/8	20 & 24" Swing	1 3/8	17.30	T-5-R
T-6-R	1 1/4 x 2 1/4 x 13	3/4		1 9/16	32.50	T-6-R
T-7-R	1 1/2 x 2 1/2 x 16	7/8		2	56.60	T-7-R
T-750-R	1 5/8 x 2 3/4 x 18	1		2 1/4	96.35	T-750-R
T-800-R	1 3/4 x 3 x 20	1 1/8		2 1/2	120.40	T-800-R

FOR HEAVY DUTY CUTTERS

FT-0-R	3/8 x 15/16 x 6	1/4 x 3/8	9 & 10" Swing	11/16	\$6.10	FT-0-R
FT-1-R	1/2 x 1 1/4 x 7	5/16 x 7/16	11, 12, 13, 14" Swing	7/8	7.00	FT-1-R
FT-2-R	5/8 x 1 1/2 x 8	3/8 x 1/2	14 & 16" Swing	1	8.65	FT-2-R
FT-3-R	3/4 x 1-3/4 x 9	7/16 x 9/16	16" Swing	1 1/8	11.50	FT-3-R
FT-4-R	7/8 x 1 7/8 x 10	1/2 x 3/4	18" Swing	1 1/4	14.70	FT-4-R
FT-5-R	1 x 2 1/8 x 12	5/8 x 7/8	20 & 24" Swing	1 3/8	20.65	FT-5-R

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG Tool Holders of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMIDE CARBIDE-TIPPED CUTTERS (see pages 59 to 61).



ARMSTRONG CUTTING-OFF TOOLS

Straight Shank

The ARMSTRONG system is especially efficient and economical when applied to cutting-off in a lathe as the cutter is adjustable to any desired clearance and the greatest support possible is obtainable under all conditions.

ARMSTRONG High Speed cutter blades are beveled on both sides and are held at an angle giving the side clearance and top rake needed to obtain a clean, smooth cut.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
19	5/16 x 3/4 x 4 1/2	3/32 x 1/2	6 & 8" Swing	5/8	\$ 4.55	19
20	3/8 x 7/8 x 5	3/32 x 5/8	9 & 10" Swing	3/4	4.80	20
21	1/2 x 1 1/8 x 6	1/8 x 3/4	11, 12, 13, 14" Swing	7/8	5.75	21
22	5/8 x 1 3/8 x 7	1/8 x 7/8	14 & 16" Swing	1 3/16	7.20	22
23	3/4 x 1 5/8 x 8	3/16 x 1	16" Swing	1 1/4	9.60	23
24	7/8 x 1 3/4 x 9	3/16 x 1 1/8	18" Swing	1 1/2	12.00	24
25	1 x 2 x 10	1/4 x 1 1/4	20 & 24" Swing	1 11/16	15.60	25
26	1 1/4 x 2 1/4 x 11	1/4 x 1 3/8	30 & 36" Swing	1 13/16	18.65	26

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG CUTTING-OFF TOOLS

Left Hand Off-Set

The ARMSTRONG system is especially efficient and economical when applied to cutting-off in a lathe as the cutter is adjustable to any desired clearance and the greatest support possible is obtainable under all conditions. ARMSTRONG High Speed cutter blades are beveled on both sides and are held at an angle giving the side clearance and top rake needed to obtain a clean, smooth cut.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
29-L	5/16 x 3/4	3/32 x 1/2	6 & 8" Swing	5/8	\$ 4.55	29-L
30-L	3/8 x 7/8	3/32 x 5/8	9 & 10" Swing	3/4	4.80	30-L
31-L	1/2 x 1 1/8	1/8 x 3/4	11, 12, 13, 14" Swing	7/8	5.75	31-L
32-L	5/8 x 1 3/8	1/8 x 7/8	14 & 16" Swing	1 3/16	7.20	32-L
33-L	3/4 x 1 5/8	3/16 x 1	16" Swing	1 1/4	9.60	33-L
34-L	7/8 x 1 3/4	3/16 x 1 1/8	18" Swing	1 1/2	12.00	34-L
35-L	1 x 2	1/4 x 1 1/4	20 & 24" Swing	1 11/16	15.60	35-L
36-L	1 1/4 x 2 1/4	1/4 x 1 3/8	30 & 36" Swing	1 13/16	18.65	36-L

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG CUTTING-OFF TOOLS

Right Hand Off-Set

The ARMSTRONG system is especially efficient and economical when applied to cutting-off in a lathe as the cutter is adjustable to any desired clearance and the greatest support possible is obtainable under all conditions. ARMSTRONG High Speed cutter blades are beveled on both sides and are held at an angle giving the side clearance and top rake needed to obtain a clean, smooth cut.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
29-R	5/16 x 3/4	3/32 x 1/2	6 & 8" Swing	5/8	\$ 4.55	29-R
30-R	3/8 x 7/8	3/32 x 5/8	9 & 10" Swing	3/4	4.80	30-R
31-R	1/2 x 1 1/8	1/8 x 3/4	11, 12, 13, 14" Swing	7/8	5.75	31-R
32-R	5/8 x 1 3/8	1/8 x 7/8	14 & 16" Swing	1 3/16	7.20	32-R
33-R	3/4 x 1 5/8	3/16 x 1	16" Swing	1 1/4	9.60	33-R
34-R	7/8 x 1 3/4	3/16 x 1 1/8	18" Swing	1 1/2	12.00	34-R
35-R	1 x 2	1/4 x 1 1/4	20 & 24" Swing	1 11/16	15.60	35-R
36-R	1 1/4 x 2 1/4	1/4 x 1 3/8	30 & 36" Swing	1 13/16	18.65	36-R

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SPRING CUTTING-OFF TOOLS

Straight Shank

Cutting off in a lathe, always regarded as the hardest of lathe work, has been made comparatively simple by the ARMSTRONG Spring Cutting-off Tool. The "goose neck" form of this tool gives the cutter a resiliency that takes up any chatter and keeps the work from climbing up on the tool—the cause of practically all cutting-off tool breakage. The cutter is adjustable to any desired clearance.

ARMSTRONG High Speed cutter blades are beveled on both sides and are held at an angle, giving the side clearance and top rake needed to obtain a clean, smooth cut.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
S-20	3/8 x 7/8	3/32 x 5/8	9 & 10" Swing	3/4	\$ 7.20	S-20
S-21	1/2 x 1 1/8	1/8 x 3/4	11, 12, 13, 14" Swing	15/16	8.65	S-21
S-22	5/8 x 1 3/8	1/8 x 7/8	14 & 16" Swing	1 3/16	10.80	S-22
S-23	3/4 x 1 5/8	3/16 x 1	16" Swing	1 7/16	14.40	S-23

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SPRING CUTTING-OFF TOOLS

Left Hand Off-Set

Cutting off in a lathe, always regarded as the hardest of lathe work, has been made comparatively simple by the ARMSTRONG Spring Cutting-off Tool. The "goose neck" form of this tool gives the cutter a resiliency that takes up any chatter and keeps the work from climbing up on the tool—the cause of practically all cutting-off tool breakage. The cutter is adjustable to any desired clearance. ARMSTRONG High Speed cutter blades are beveled on both sides and are held at an angle giving the side clearance and top rake needed to obtain a clean, smooth cut.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
S-30-L	3/8 x 7/8	3/32 x 5/8	9 & 10" Swing	3/4	\$ 7.20	S-30-L
S-31-L	1/2 x 1 1/8	1/8 x 3/4	11, 12, 13, 14" Swing	15/16	8.65	S-31-L
S-32-L	5/8 x 1 3/8	1/8 x 7/8	14 & 16" Swing	1 3/16	10.80	S-32-L
S-33-L	3/4 x 1 5/8	3/16 x 1	16" Swing	1 7/16	14.40	S-33-L

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SPRING CUTTING-OFF TOOLS

Right Hand Off-Set

Cutting off in a lathe, always regarded as the hardest of lathe work, has been made comparatively simple by the ARMSTRONG Spring Cutting-off Tool. The "gooseneck" form of this tool gives the cutter a resiliency that takes up any chatter and keeps the work from climbing up on the tool—the cause of practically all cutting-off tool breakage. The cutter is adjustable to any desired clearance. ARMSTRONG High Speed cutter blades are beveled on both sides and are held at an angle giving the side clearance and top rake needed to obtain a clean, smooth cut.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
S-30-R	3/8 x 7/8	3/32 x 5/8	9 & 10" Swing	3/4	\$ 7.20	S-30-R
S-31-R	1/2 x 1 1/8	1/8 x 3/4	11, 12, 13, 14" Swing	15/16	8.65	S-31-R
S-32-R	5/8 x 1 3/8	1/8 x 7/8	14 & 16" Swing	1 3/16	10.80	S-32-R
S-33-R	3/4 x 1 5/8	3/16 x 1	16" Swing	1 7/16	14.40	S-33-R

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

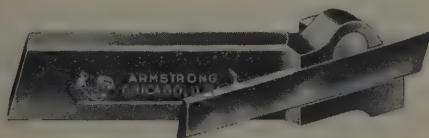
For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SIDE TOOLS

Left Hand Off-Set

The design of the ARMSTRONG Side Tool is typical of the entire ARMSTRONG system of Tool Holders, embodying convenience, simplicity and strength.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
69-L	5/16 x 3/4	1/8 x 1/2	6 & 8" Swing	9/16	\$ 4.55	69-L
70-L	3/8 x 7/8	5/32 x 5/8	9 & 10" Swing	11/16	5.45	70-L
71-L	1/2 x 1 1/8	3/16 x 3/4	11, 12, 13, 14" Swing	15/16	7.00	71-L
72-L	5/8 x 1 3/8	1/4 x 7/8	14 & 16" Swing	1 1/8	9.60	72-L
73-L	3/4 x 1 5/8	5/16 x 1	16" Swing	1 1/4	12.55	73-L
74-L	7/8 x 1 3/4	3/8 x 1 1/4	18" Swing	1 3/8	17.05	74-L
75-L	1 x 2	7/16 x 1 3/8	20 & 24" Swing	1 1/2	20.40	75-L
76-L	1 1/4 x 2 1/4	1/2 x 1 1/2	30 & 36" Swing	1 3/4	26.40	76-L

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SIDE TOOLS

Right Hand Off-Set

The design of the ARMSTRONG Side Tools is typical of the entire ARMSTRONG system of Tool Holders, embodying convenience, simplicity and strength.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Shank	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
69-R	5/16 x 3/4	1/8 x 1/2	6 & 8" Swing	9/16	\$ 4.55	69-R
70-R	3/8 x 7/8	5/32 x 5/8	9 & 10" Swing	11/16	5.45	70-R
71-R	1/2 x 1 1/8	3/16 x 3/4	11 to 14" Swing	15/16	7.00	71-R
72-R	5/8 x 1 3/8	1/4 x 7/8	14 & 16" Swing	1 1/8	9.60	72-R
73-R	3/4 x 1 5/8	5/16 x 1	16" Swing	1 1/4	12.55	73-R
74-R	7/8 x 1 3/4	3/8 x 1 1/4	18" Swing	1 3/8	17.05	74-R
75-R	1 x 2	7/16 x 1 3/8	20 & 24" Swing	1 1/2	20.40	75-R
76-R	1 1/4 x 2 1/4	1/2 x 1 1/2	30 & 36" Swing	1 3/4	26.40	76-R

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SIDE TOOLS

Left Hand Straight Shank

In addition to their primary use on lathes, ARMSTRONG Straight Shank Side Tools are well adapted for Planer and Shaper work on which they will be found exceptionally convenient and efficient.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Holder	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
79-L	5/16 x 3/4 x 4 1/2	1/8 x 1/2	6 & 8" Swing	9/16	\$ 4.55	79-L
80-L	3/8 x 7/8 x 5	5/32 x 5/8	9 & 10" Swing	11/16	5.45	80-L
81-L	1/2 x 1 1/8 x 6	3/16 x 3/4	11 to 14" Swing	15/16	7.00	81-L
82-L	5/8 x 1 3/8 x 7	1/4 x 7/8	14 & 16" Swing	1 1/8	9.60	82-L
83-L	3/4 x 1 5/8 x 8	5/16 x 1	16" Swing	1 1/4	12.55	83-L
84-L	7/8 x 1 3/4 x 9	3/8 x 1 1/4	18" Swing	1 3/8	17.05	84-L
85-L	1 x 2 x 11	7/16 x 1 3/8	20 & 24" Swing	1 1/2	20.40	85-L
86-L	1 1/4 x 2 1/4 x 13	1/2 x 1 1/2	30 & 36" Swing	1 3/4	26.40	86-L

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG SIDE TOOLS

Right Hand Straight Shank

In addition to their primary use on lathes, ARMSTRONG Straight Shank Side Tools are well adapted for planer and shaper work on which they will be found exceptionally convenient and efficient.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter blade.

Approximate sizes of cutters are shown; actual sizes are slightly less.

For extra High Speed cutter blades see page 55.

No.	Size of Holder	Size of Cutter	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
79-R	5/16 x 3/4 x 4 1/2	1/8 x 1/2	6 & 8" Swing	9/16	\$ 4.55	79-R
80-R	3/8 x 7/8 x 5	5/32 x 5/8	9 & 10" Swing	11/16	5.45	80-R
81-R	1/2 x 1 1/8 x 6	3/16 x 3/4	11 to 14" Swing	15/16	7.00	81-R
82-R	5/8 x 1 3/8 x 7	1/4 x 7/8	14 & 16" Swing	1 1/8	9.60	82-R
83-R	3/4 x 1 5/8 x 8	5/16 x 1	16" Swing	1 1/4	12.55	83-R
84-R	7/8 x 1 3/4 x 9	3/8 x 1 1/4	18" Swing	1 3/8	17.05	84-R
85-R	1 x 2 x 11	7/16 x 1 3/8	20' & 24" Swing	1 1/2	20.40	85-R
86-R	1 1/4 x 2 1/4 x 13	1/2 x 1 1/2	30 & 36" Swing	1 3/4	26.40	86-R

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

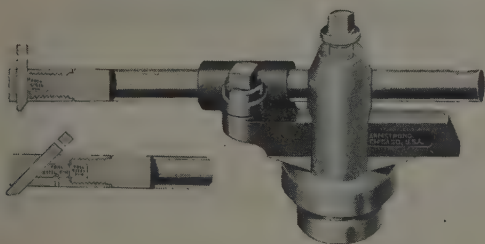
For best results use ARMSTRONG High Speed Cutter Blades (see page 55).



ARMSTRONG BORING TOOLS

The convenience and many practical advantages of the ARMSTRONG system of boring tools are known and appreciated in almost every modern machine shop. A half turn of one screw clamps or releases the bar which can be extended from the shank or holder to any desired length, giving the greatest degree of stiffness possible on every job.

The end caps used with this tool lock the cutters rigidly under a tool steel "automatic set screw" which cannot loosen while the tool is cutting, yet instantly releases the cutter for removal. The end caps are interchangeable without removing the bar. They are furnished in three styles: 90° for boring with single or double end cutter; 45° for boring and facing; and 30° for internal threading.



The above cut shows 90° end cap with double end cutter roughing out cored hole and also 45° end cap cutter boring and facing end.



Showing 30° end cap cutting internal thread.

For best results buy ARMSTRONG TOOL HOLDERS.



ARMSTRONG BORING TOOLS

The ARMSTRONG Boring Tool is equal in practical efficiency to a whole set of forged boring and inside threading tools. A half turn of one screw clamps or releases the bar which can be extended from the shank or holder to any desired length, giving the greatest degree of stiffness possible on every job.

The end caps lock the cutters rigidly under a tool steel "automatic set screw" which cannot loosen while the tool is cutting, yet instantly releases the cutter for removal when not in use.



The holder of each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes holder and bar, 90°, 45° and 30° end caps, three High Speed cutters and double head wrench.

For extra boring tool parts see page 25.

No.	Size of Shank	Size Cutter Square	Diameter of Bar	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Center	LIST PRICE Tool Complete	No.
00B	5/16 x 3/4	3/16	1/2	6 & 8" Swing	3/4	\$ 7.85	00B
8	3/8 x 7/8	3/16	9/16	9 & 10" Swing	7/8	7.85	8
9	1/2 x 1 1/8	1/4	3/4	11 to 14" Swing	1 1/8	9.30	9
10	5/8 x 1 3/8	5/16	15/16	14 & 16" Swing	1 1/4	12.25	10
11	3/4 x 1 5/8	3/8	1 1/8	16" Swing	1 1/2	17.35	11
12	7/8 x 1 3/4	7/16	1 5/16	18" Swing	1 5/8	25.60	12
13	1 x 2	1/2	1 1/2	20 & 24" Swing	1 3/4	36.00	13

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG BORING TOOLS

Especially designed for use on lathes of British and European make having clamp tool rest and American lathes of similar design.



Each Tool is boxed separately and price includes holder and bar, 90°, 45° and 30° end caps, three ARMSTRONG High Speed cutters and double head wrench.

No.	Size of Shank	Size of Cutter Square	Diameter of Bar	Nominal Height From Bottom of Holder to Center	LIST PRICE Tool Complete	No.
108	3/4 x 7/8	3/16	9/16	7/16	\$ 6.65	108
109	1 x 1 1/8	1/4	3/4	9/16	7.85	109
110	1 1/4 x 1 3/8	5/16	15/16	11/16	10.40	110
111	1 1/2 x 1 5/8	3/8	1 1/8	13/16	15.00	111
112	1 3/4 x 1 7/8	7/16	1 5/16	15/16	21.60	112
113	2 x 2 1/8	1/2	1 1/2	1 1/16	28.80	113
114	2 1/4 x 2 3/8	5/8	1 13/16	1 3/16	43.20	114

BORING TOOL PARTS

When ordering be sure to specify catalog number

For Boring Bar, Diameter	90° End Cap		45° End Cap		30° End Cap		Wrench	
	Part No.	LIST PRICE, EA.	Part No.	LIST PRICE, EA.	Part No.	LIST PRICE, EA.	Part No.	LIST PRICE, EA.
1/2	8001	\$0.72	8021	\$0.96	8041	\$0.96	8081	\$0.75
9/16	8002	.72	8022	.96	8042	.96	8082	.75
3/4	8003	.96	8023	1.28	8043	1.28	8083	.95
15/16	8004	1.20	8024	1.84	8044	1.84	8084	1.20
1 1/8	8005	1.44	8025	2.00	8045	2.00	8085	1.45
1 5/16	8006	2.08	8026	3.20	8046	3.20	8086	2.10
1 1/2	8007	3.12	8027	4.80	8047	4.80	8087	3.10
1 13/16	8008	4.48	8028	6.72	8048	6.72	8088	4.50

BORING TOOL BUSHINGS

For Boring Bar, Dia.	Fits Tool Shank, No.	Bushing No.	LIST PRICE, Ea.
1/2	8	8178	\$1.10
1/2	9	8179	1.45
1/2	10	8180	1.80
9/16	9	8184	1.45
9/16	10	8185	1.80
9/16	11	8186	2.15
3/4	10	8189	1.80
3/4	11	8190	2.15
3/4	12	8191	3.10



When ordering Boring Tool Bushings please specify Bushing Number. Bushings listed for tool Nos. 8, 9, 10 can also be used in tool Nos., 108, 109, 110, etc.

For Boring Bar, Dia.	Fits Tool Shank No.	Bushing No.	LIST PRICE Ea.
15/16	11	8193	\$2.15
15/16	12	8194	3.10
15/16	13	8195	4.80
1 1/8	12	8196	3.10
1 1/8	13	8197	4.80
1 5/16	13	8198	4.80

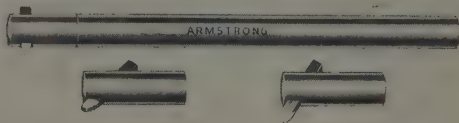


ARMSTRONG BORING BARS

For Use in Armstrong Boring Tools

END CAP PATTERN

For boring, facing and internal threading, the ARMSTRONG End Cap Pattern Boring Bar is unexcelled. The end caps lock the cutters rigidly under a tool steel "automatic set screw" which cannot loosen while the tool is cutting yet instantly releases the cutter for removal. The end caps are interchangeable without removing the bar from the holder.



Each ARMSTRONG Boring Bar is machined from a selected steel and is accurately broached.

Each bar is boxed separately and price includes bar with 90°, 45° and 30° end caps, three ARMSTRONG High Speed cutters, double head wrench and bushing. (No bushing with nos. 013, 014).

In ordering be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.

No.	Dimensions of Bar		Size of Cutter Square	With Bushing to Fit Shank	LIST PRICE Each Complete	No.
	Diameter	Length				
0B	1/2	8	3/16	No. 8, 9 or 10	\$ 4.80	0B
08	9/16	9	3/16	No. 9, 10, or 11	4.80	08
09	3/4	11	1/4	No. 10, 11 or 12	6.00	09
010	15/16	13	5/16	No. 11, 12 or 13	8.65	010
011	1 1/8	16	3/8	No. 12 or 13	12.00	011
012	1 5/16	18	7/16	No. 13	16.80	012
013	1 1/2	23	1/2	Without Bushing	21.60	013
014	1 13/16	28	5/8	Without Bushing	31.20	014

Note—These boring bars may be adapted to screw machines and turret lathes by using the plain turners described on page 46.



ARMSTRONG BORING BARS

For Use in Armstrong Boring Tools

PLAIN BAR

The ARMSTRONG Plain Boring Bar has one end broached at 90° angle and the opposite end broached at 45° angle for square cutters.



Each ARMSTRONG Boring Bar is machined from a selected steel and is accurately broached.

Each bar is boxed separately and price includes bar with two ARMSTRONG High Speed cutters, hollow set screw wrench, and bushing.

In ordering, be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.

No.	Dimensions of Bar		Size of Cutter Square	With Bushing to Fit Shank	LIST PRICE Each Complete	No.
	Diameter	Length				
0B-X	1/2	8	3/16	No. 8, 9 or 10	\$ 3.85	0B-X
08-X	9/16	9	3/16	No. 9, 10 or 11	3.85	08-X
09-X	3/4	11	1/4	No. 10, 11 or 12	4.70	09-X
010-X	15/16	13	5/16	No. 11, 12 or 13	6.80	010-X
011-X	1 1/8	16	3/8	No. 12 or 13	10.00	011-X
012-X	1 5/16	18	7/16	No. 13	14.40	012-X
013-X	1 1/2	23	1/2	Without Bushing	18.80	013-X
014-X	1 13/16	28	5/8	Without Bushing	28.00	014-X

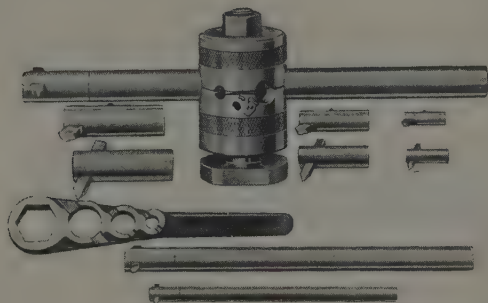
Note—these boring bars may be adapted to screw machines and turret lathes by using the plain turners described on page 46.

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG 3-BAR BORING TOOL

A slight turn of one nut allows bars to be changed as needed instantly, thus allowing the operator to use the stiffest bar possible for each job with the result that speeds and feeds can be increased and time saved.



Each set is boxed separately and price includes holder, three ARMSTRONG Boring Bars with 90°, 45° and 30° end caps, nine ARMSTRONG High Speed cutter bits and combination wrench.

(No. 0-BB is furnished with one solid type boring bar, two boring bars with 90°, 45° and 30° end caps, six high speed cutters and three wrenches.)

No.	Diameter Bars	Length of Bars	Size Cutters Square	For Lathes Approx. Size Swing	Nominal Height From Bottom to Center of Shell	LIST PRICE Tool Complete	No.
0-BB	3/8, 1/2, 3/4	7, 8, 11	* 3/16, 1/4	8 to 10"	1 5/16	\$ 22.40	0-BB
1-B	1/2, 3/4, 1 1/8	8, 11, 16	3/16, 1/4, 3/8	12 to 16"	2 1/8	36.00	1-B
2-B	9/16, 15/16, 1 5/16	9, 13, 18	3/16, 5/16, 7/16	16 to 18"	2 1/2	48.00	2-B
3-B	3/4, 1 1/8, 1 1/2	11, 16, 23	1/4, 3/8, 1/2	20 to 22"	2 7/8	84.00	3-B
4-B	15/16, 1 5/16, 1 13/16	13, 18, 28	5/16, 7/16, 5/8	24 to 32"	3 1/4	120.00	4-B

*3/8 bar is solid. For description, see page 29.

Note—bolt head and bottom part of holder are made of ample size to allow for fitting which is necessary on account of the great variation in height of centers above slide rest and difference in sizes of T slots.

Fitting -An extra charge will be made for fitting holders to the lathe on which the tool is to be used. No. 0-BB, \$2.00 net, Nos. 1-B and 2-B, \$3.50 net, Nos. 3-B and 4-B, \$5.50 net.

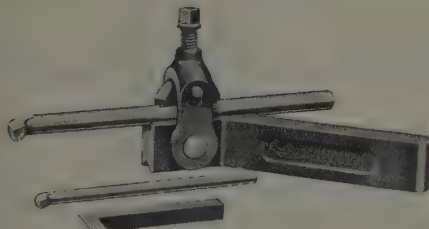
For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG BORING TOOL HOLDER

For Light Boring, Threading and Turning

This tool will be found very handy in the tool room for boring work of small internal diameter, threading, brass turning, etc. The boring bars furnished are forged from the best high speed steel properly hardened, tempered and ground to shape ready for finish grinding. The holder is reversible, and can be used for turning either right or left hand as the floating tool steel gib allows the yoke to clear the end of the holder.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes holder, wrench, two ARMSTRONG High Speed boring bars and one ARMSTRONG High Speed cutter.

No.	Size of Shank	Size of Bars Furnished Diam.	Size of Square Cutter	LIST PRICE Tool Complete	No.
15	3/8 x 3/4	3/16 and 1/4	1/4	\$ 6.65	15
16	1/2 x 1	3/16 and 5/16	5/16	8.40	16
17	5/8 x 1 1/4	1/4 and 3/8	3/8	10.80	17
18	3/4 x 1 1/2	5/16 and 7/16	7/16	13.85	18

EXTRA BORING BARS



ARMSTRONG Extra Boring Bars are forged from the best high speed steel properly hardened, tempered and ground to shape ready for finish grinding.

Packed six of a size in a box.

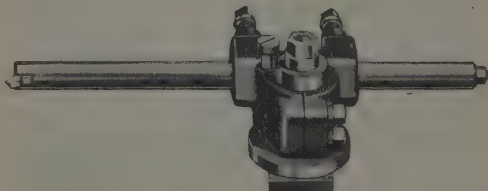
No.	\$140	8141	8142	8143	8144	8145
Diameter	1/8	3/16	1/4	5/16	3/8	7/16
Length	4	4 1/2	5	6	7	8
LIST PRICE Each	\$0.60	\$0.80	\$1.00	\$1.20	\$1.60	\$2.20

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG ADJUSTABLE BORING TOOL

This tool combines convenience, adjustability and rigidity to a remarkable degree and is well adapted to a very wide range of work. The holder is easily adjustable to different heights and will hold bars of various diameters. The bars are made from high carbon steel seamless tubing of heavy gauge and are extremely stiff. The cutter can be adjusted and solidly fixed at various angles for boring, facing or turning.



Each tool is boxed separately and price includes holder, one bar, two ARMSTRONG High Speed cutters and wrench.

No.	Capacity of Holder Diameter Bars	Size Bar Furnished	Size Cutter Square	For Lathes Approx. Swing	LIST PRICE Tool Complete	No.
212	3/4 to 1 5/16	1 5/16 x 21	3/8	14 to 18"	\$ 43.20	212
213	3/4 to 1 1/2	1 1/2 x 24	7/16	16 to 20"	60.00	213
214	3/4 to 1 13/16	1 13/16 x 28	1/2	18 to 24"	96.00	214
215	3/4 to 2 1/4	2 1/4 x 36	5/8	20 to 36"	144.00	215

Note—Bolt head is made large enough to allow for fitting to T slots of various sizes.

Fitting—An extra charge will be made for fitting bolt head to special dimensions, Nos. 212 and 213, \$2.00 net, Nos. 214 and 215, \$4.00 net.

EXTRA ADJUSTABLE BORING BARS

Prices includes one bar of size specified, two ARMSTRONG High Speed cutters and wrench.

No.	Size of Bar		Size Cutter Square	LIST PRICE Each Complete	No.
	Diameter	Length			
0521	3/4	14	3/16	\$ 7.75	0521
0522	15/16	16	1/4	9.60	0522
0523	1 1/8	18	5/16	13.20	0523
0524	1 5/16	21	3/8	18.00	0524
0525	1 1/2	24	7/16	24.00	0525
0526	1 13/16	28	1/2	36.00	0526
0527	2 1/4	36	5/8	67.20	0527

For best results use ARMSTRONG Cutter Bits (see page 54).



ARMSTRONG THREADING TOOLS

For Formed Cutters

A Threading Tool is essentially a forming tool and any error or inaccuracy of shape or angle in the tool point will surely be reproduced in the thread and must result in poorly fitted work.

The cutters used in the ARMSTRONG Threading Tool require grinding on the top edge only, to sharpen, and therefore always remain true to form and of correct angle; their use insures perfect fitting threads, and saves much grinding, as well as dispensing entirely with forging and tempering. The cutters are backed off to afford proper clearance. The back of cutter is eccentric in form and bears upon a hardened stop screw. This arrangement allows of positive and accurate adjustment after grinding.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed Sharp V-Thread cutter unless otherwise ordered.

No.	Size of Holder	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
00T	5/16 x 3/4 x 5	7 to 10" Swing	3/4	\$ 6.65	00T
50	3/8 x 7/8 x 5	10 to 12" Swing	7/8	6.65	50
51	1/2 x 1 1/8 x 6	14 to 16" Swing	1 1/8	8.00	51
52	5/8 x 1 3/8 x 7	16 to 18" Swing	1 3/8	10.25	52
53	3/4 x 1 5/8 x 8	18 to 20" Swing	1 3/4	13.20	53
54	7/8 x 1 3/4 x 9	24 to 36" Swing	1 7/8	15.60	54

When ordering tools equipped with American Standard Thread Form Coarse (NC) and Fine (NF) cutters or Whitworth Standard Thread Form (B.S.W.) cutters, be sure to specify pitch or number of threads per inch wanted. For list of pitches available see page 34. Tools equipped with Sharp V-thread cutters will always be shipped unless otherwise ordered. For extra cutters and list of pitches available see page 34.

* As there is a wide variation in the proportions of lathes of different manufacturer, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

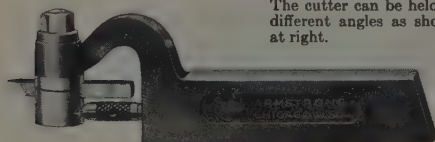


ARMSTRONG SPRING THREADING TOOL

For Square Cutters

This ARMSTRONG Spring Threading Tool is designed to combine strength and convenience of adjustment and operation with the resiliency which is considered by many machinists to be helpful in obtaining a smooth, finishing cut or thread especially on alloy steels of an extremely tough nature. Convenient means is also provided for obtaining complete rigidity when desired as, for instance, in taking a roughing cut or doing an ordinary job of turning. The cutter can be held at different angles as shown.

High Speed threading cutters for this tool are furnished ground to Sharp V-thread form. Any other form thread required may be quickly ground to shape from standard ARMSTRONG High Speed cutter bits.



The cutter can be held at different angles as shown at right.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes one ARMSTRONG High Speed Sharp V-thread cutter and wrench.

For extra Threading Cutters see page 34.

For extra High Speed Cutter Bits see page 54.

No.	Size of Holder	Size of Cutter Square	For Lathes Approx. Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
S-50	3/8 x 7/8 x 5 1/2	1/4	10 to 12" Swing	5/8	\$ 6.65	S-50
S-51	1/2 x 1 1/8 x 6 1/2	5/16	14 to 16" Swing	3/4	8.00	S-51
S-52	5/8 x 1 3/8 x 7 1/2	3/8	16 to 18" Swing	1 1/16	10.25	S-52
S-53	3/4 x 1 5/8 x 8 1/2	7/16	18 to 20" Swing	1 3/8	13.20	S-53

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

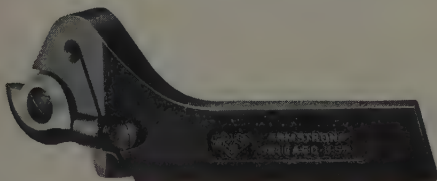


ARMSTRONG SPRING THREADING TOOL

FOR FORMED CUTTERS

The ARMSTRONG Spring Threading Tool is designed to combine strength and convenience of adjustment and operation with the resiliency necessary in obtaining a smooth, finished thread especially on alloy steels of an extremely tough nature.

The cutters used in the ARMSTRONG Spring Threading Tool require grinding on the top edge only, to sharpen, and therefore always remain true to form and of correct angle; their use insures perfect fitting threads, and saves much grinding, as well as dispensing entirely with forging and tempering. The cutters are backed off to afford proper clearance. The back of cutter is eccentric in form and bears upon a hardened stop screw. This arrangement allows of positive and accurate adjustment after grinding.



Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed Sharp V-thread cutter unless otherwise ordered.

No.	Size of Holder	For Lathes Approximate Size*	Nominal Height From Bottom of Shank to Cutter Point	LIST PRICE Tool Complete	No.
NS-50	3/8 x 7/8 x 5 1/2	10 to 12" Swing	7/8	\$10.00	NS-50
NS-51	1/2 x 1 1/8 x 6 1/2	14 to 16" Swing	1 1/4	12.00	NS-51
NS-52	5/8 x 1 3/8 x 7 1/2	16 to 18" Swing	1 3/8	15.50	NS-52
NS-53	3/4 x 1 5/8 x 8 1/2	18 to 20" Swing	1 5/8	20.00	NS-53

When ordering tools equipped with American Standard Thread Form Coarse (NC) and Fine (NF) cutters or Whitworth Standard Thread Form (B.S.W.) cutters, be sure to specify pitch or number of threads per inch wanted. For list of pitches available see page 34.

*As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.



ARMSTRONG FORMED CUTTERS FOR THREADING TOOLS

Made from Selected High Speed Steel

ARMSTRONG Formed Cutters for use with ARMSTRONG Threading Tools are drop forged from selected High Speed Steel.



Grinding and Adjusting Cutters

Always grind the cutter on a line from the point to the center, as indicated by the dotted lines in the accompanying outline view of cutter, then adjust the cutter so that the newly ground cutting edge represented by dotted lines is in a horizontal position or parallel to the line A. A. When fastening the cutter in position first see that adjusting screw is firmly set against heel of cutter, before pulling up nut.

For description of ARMSTRONG Threading Tools for formed cutters see pages 31 and 33.

FORMED THREADING CUTTERS

We make and carry in stock single point cutters in treated High Speed Steel, to cut the pitches listed below in Sharp V-thread, American Standard Thread Form Coarse (NC) or Fine (NF) series and Whitworth Standard Thread Form (B.S.W.)

For Tool No.	00T, 50 & NS-50	51 & NS-51	52 & NS-52	53, NS-53 & 54
Stand. Pitches Avail.	6 to 20 Incl.	5 to 20 Incl.	4 to 20 Incl.	3 to 20 Incl.
LIST PRICE Each	\$4.25	\$5.00	\$6.65	\$8.40
Sharp V-thread	No. 8151	No. 8153	No. 8155	No. 8157
Amer. Std. Coarse (NC)	8161	8163	8165	8167
Amer. Std. Fine (NF)	8168	8169	8170	8150
Whitworth Std. (B.S.W.)	8171	8173	8175	8177

SQUARE THREADING CUTTERS

ARMSTRONG Square Threading Cutters in treated High Speed Steel are furnished ground to Sharp V-thread form. Ready for use in ARMSTRONG Spring Threading Tools described on page 32.

For Tool No.	S-50	S-51	S-52	S-53
Size of Cutter	1/4 x 1/4 x 2 1/8	5/16 x 5/16 x 2 3/4	3/8 x 3/8 x 3 1/4	7/16 x 7/16 x 3 3/4
No. of Cutter	8101	8102	8103	8104
LIST PRICE Each	\$0.75	\$0.90	\$1.15	\$1.75



ARMSTRONG KNURLING TOOL

The ARMSTRONG Knurling Tool is self centering and the knuckle or joint has ample bearing to resist the severe strains of both end and side thrust. In these essentials, the ARMSTRONG Knurling Tool is unexcelled. The knurls and pins are accurately made of tool steel suitably tempered. All other parts are drop forged or bar steel, hardened.



Standard face medium diamond knurls always furnished unless otherwise ordered. Tools can be furnished either diamond or straight line knurls, standard or full face, fine, medium or coarse pitch.

Each tool is boxed separately.

For a complete description of ARMSTRONG Hob-Cut Knurls furnished, see page 37.

No.	Size of Holder	Dimension of Knurls			Knurling Capacity Diameter	For Lathes Approx. Size Swing*	LIST PRICE Tool Complete	No.
		Diam.	Face (Stand.)	Hole				
00-K	5/16 x 3/4 x 5	5/8	3/16	7/32	1/8 up	7 to 10"	\$ 9.00	00-K
0-K	3/8 x 7/8 x 5 1/2	5/8	3/16	7/32	1/8 up	10 to 12"	9.60	0-K
1-K	1/2 x 1 1/8 x 6 1/2	3/4	1/4	1/4	3/16 up	14 to 16"	10.80	1-K
2-K	5/8 x 1 3/8 x 7 1/2	3/4	1/4	1/4	3/16 up	16 to 18"	12.80	2-K
4-K	7/8 x 1 3/4 x 9	1	1/4	5/16	1/4 up	24 to 36"	22.40	4-K

EXTRA KNURL PINS

When ordering please specify by catalog-number.

No.	For Tool No.	LIST PRICE—Pair
8097	00-K, 0-K	\$0.50
8098	1-K, 2-K	.70
8099	4-K	1.00

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size of swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.

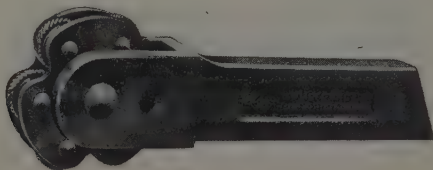


ARMSTRONG KNURLING TOOL

With Revolving Head

The advantages of this tool are apparent at a glance. The revolving head is fitted with three pairs of knurls, fine, medium and coarse, any of which can be used without the inconvenience and loss of time incident to changing knurls.

Knurls and pins are accurately made of tool steel, suitably tempered. All other parts are drop forged or bar steel, hardened.



Standard face diamond knurls always furnished unless otherwise ordered. Tools can be furnished either diamond or straight line knurls, standard or full face, fine, medium or coarse pitch.

Each tool is boxed separately.

For complete description of ARMSTRONG Hob-Cut Knurls furnished, see page 37.

No.	Size of Holder	Dimensions of Knurls			Knurling Capacity Diameter	For Lathes Approx. Size Swing*	LIST PRICE Tool Complete	No.
		Diam.	Face (Stand.)	Hole				
3-K-00	5/16 x 3/4 x 5	5/8	3/16	7/32	3/16 up	7 to 10"	\$12.00	3-K-00
3-K-0	3/8 x 7/8 x 5 1/2	5/8	3/16	7/32	3/16 up	10 to 12"	12.80	3-K-0
3-K-1	1/2 x 1 1/8 x 6 1/2	3/4	1/4	1/4	1/4 up	14 to 16"	14.40	3-K-1
3-K-2	5/8 x 1 3/8 x 7 1/2	3/4	1/4	1/4	1/4 up	16 to 18"	16.80	3-K-2

EXTRA KNURL PINS

When ordering please specify by catalog number.

No.	For Tool No.	LIST PRICE—Pair
8097	3-K-00, 3-K-0	\$0.50
8088	3-K-1, 3-K-2	.70

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of ARMSTRONG tools of different sizes. Tool posts should be carefully measured before ordering tools.



ARMSTRONG KNURLS

ARMSTRONG Knurls are individually Hob-Cut to obtain sharp perfectly formed teeth in every knurl. Consequently, these knurls produce work of like precision and uniformity. ARMSTRONG Knurls are held within close limits of accuracy for thickness and for diameter of hole which is always concentric under the hob-cut method of manufacture. They are cut from extra high-carbon tool steel, heat treated, tempered and tested.

DIAMOND PATTERN



Coarse
14 Pitch



Medium
21 Pitch



Fine
33 Pitch



Buy
ARMSTRONG
Hob-Cut
Knurls
in
Standard
Packages



Actual size of knurling produced
by pairs of right and left hand
diamond standard face knurls.

STRAIGHT LINE PATTERN



Coarse
14 Pitch



Medium
21 Pitch



Fine
33 Pitch



Actual size of knurling produced by
pairs of straight line full face knurls.

Note—Pitch = number of teeth per linear inch.

ARMSTRONG Knurls are furnished in pairs to fit all standard makes of knurling tools and are obtainable in diamond or straight line pattern, either standard or full face. When ordering, please be sure to specify catalog number.

DIAMOND PATTERN

Standard Face No.	Full Face No.	Pitch	Dimensions of Knurls					LIST PRICE Per Pair
			Diameter	Standard Face Width	Full Face Width	Hole Diameter	Thickness	
8221	8241	14	5/8	3/16	5/16	7/32	5/16	\$1.60
8224	8244	21						1.60
8227	8247	33						1.60
8222	8242	14						1.85
8225	8245	21	3/4	1/4	3/8	1/4	3/8	1.85
8228	8248	33						1.85
8223	8243	14						3.20
8226	8246	21	1	1/4	3/8	5/16	3/8	3.20
8229	8249	33						3.20

STRAIGHT LINE PATTERN

Standard Face No.	Full Face No.	Pitch	Diameter	Standard Face Width	Full Face Width	Hole Diameter	Thickness	LIST PRICE Per Pair
8261	8271	14	5/8	3/16	5/16	7/32	5/16	\$1.60
8264	8274	21						1.60
8267	8277	33						1.60
8262	8272	14						1.85
8265	8275	21	3/4	1/4	3/8	1/4	3/8	1.85
8268	8278	33						1.85
8263	8273	14						3.20
8266	8276	21	1	1/4	3/8	5/16	3/8	3.20
8269	8279	33						3.20

Note—ARMSTRONG Hob-Cut Knurls can be furnished made from
High Speed Steel at double the list price.

See ARMSTRONG Knurling Tools—Pages 35 and 36.



ARMSTRONG LATHE TOOL SETS

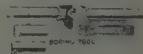
"HANDY FIVE" TOOL HOLDER SET

The ARMSTRONG "Handy Five" Tool Holder Set includes the five lathe tools which are constantly used on ordinary work—

Straight Shank Turning Tool
Boring Tool
Threading Tool
Right Hand Off-set Cutting-off Tool
Right Hand Off-set Side Tool



ARMSTRONG "HANDY FIVE" LATHE TOOL SET



Each holder is equipped with wrench and one ARMSTRONG High Speed cutter bit. Each set Nos. 00-F to 2-F is boxed separately.

Set No.	Size of Tool Shanks	For Lathes (See Note)*	PRICE Set of Five	Set No.
00-F	5/16 x 3/4	7 to 10" Swing	\$27.90	00-F
0-F	3/8 x 7/8	10 to 12" Swing	29.30	0-F
1-F	1/2 x 1 1/8	14 to 16" Swing	35.20	1-F
2-F	5/8 x 1 3/8	16 to 18" Swing	45.70	2-F
3-F	3/4 x 1 5/8	18 to 20" Swing	61.35	3-F
4-F	7/8 x 1 3/4	24 to 36" Swing	81.30	4-F

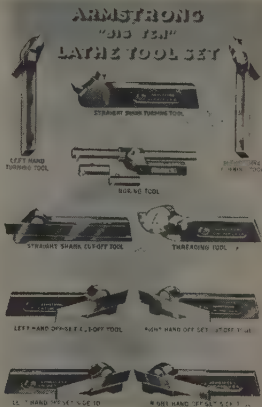
* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of tools of different sizes. Tool posts should be carefully measured before ordering tools.



ARMSTRONG LATHE TOOL SETS

"BIG TEN" TOOL HOLDER SET

The ARMSTRONG Big Ten Tool Holder Set includes the ten tools illustrated at the right and is so complete as to cover the entire range of lathe work and to render entirely unnecessary the forging of tools with the attendant waste of time and material. Each holder is equipped with wrench and one ARMSTRONG High Speed cutter. Each set Nos. 00 to 2, inclusive, is furnished in a special steel case.



Set No.	Size of Tool Shanks	For Lathes (See Note)*	PRICE Set of Ten	Set No.
00	5/16 x 3/4	7 to 10" Swing	\$ 50.25	00
0	3/8 x 7/8	10 to 12" Swing	53.75	0
1	1/2 x 1 1/8	14 to 16" Swing	64.00	1
2	5/8 x 1 3/8	16 to 18" Swing	82.50	2
3	3/4 x 1 5/8	18 to 20" Swing	110.40	3
4	7/8 x 1 3/4	24 to 36" Swing	144.00	4

* As there is a wide variation in the proportions of lathes of different manufacture, it is only possible to give approximate size or swing of lathes adapted to the use of tools of different sizes. Tool posts should be carefully measured before ordering tools.



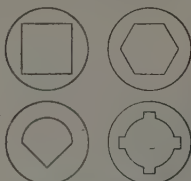
ARMSTRONG EXTENSION SHAPER TOOL

The ARMSTRONG Extension Shaper Tool is an extremely rigid and convenient tool, well adapted for die work, cutting internal keyways, or for any kind of work on the shaper in which extra clearance is needed.

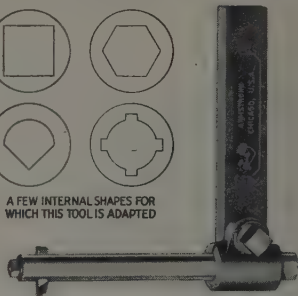
Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened. The bars are made from a tough steel and are extremely rigid.

Each tool is boxed separately and price includes one holder, one bar, one ARMSTRONG High Speed cutter bit and wrench.

For extra High Speed cutter bits see page 54.



A FEW INTERNAL SHAPES FOR WHICH THIS TOOL IS ADAPTED



No.	Size Shank	Size Bar	Size Cutter Square	LIST PRICE Tool Complete	No.
*46	3/8 x 7/8	1/2 x 7 1/2	3/16	\$ 6.40	46
47	1/2 x 1 1/8	3/4 x 10	5/16	7.20	47
48	5/8 x 1 3/8	15/16 x 12	3/8	9.00	48
49	3/4 x 1 5/8	1 1/8 x 14	7/16	12.80	49

EXTRA BARS AND BUSHINGS

Price includes bar, one bushing, one high speed cutter and wrench.

No.	Dimensions of Bar		Size of Cutter Square	Without Bushing Fits Tool No.	With Bushing To Fit Tool No.	LIST PRICE Complete	No.
	Diameter	Length					
0530	1/2	7 1/2	3/16	46	.	\$4.55	0530
0531	1/2	7 1/2	3/16	..	47	4.55	0531
0533	1/2	7 1/2	3/16	..	48	4.55	0533
0536	1/2	7 1/2	3/16	..	49	4.55	0536
0532	5/8	8 1/2	1/4	..	47	4.80	0532
0534	5/8	8 1/2	1/4	..	48	4.80	0534
0537	5/8	8 1/2	1/4	..	49	4.80	0537
0597	3/4	10	5/16	47	..	5.30	0597
0535	3/4	10	5/16	..	48	5.30	0535
0538	3/4	10	5/16	..	49	5.30	0538
0598	15/16	12	3/8	48	..	6.00	0598
0539	15/16	12	3/8	..	49	6.00	0539
0540	1 1/8	14	7/16	49	..	6.00	0540

Note—In ordering be careful to give size of shank (or number of tool) in which bar is to be used. When this information is not given no bushing will be included.

* No. 46 shank employs two hollow set screws to hold the bar instead of split collar illustrated.



ARMSTRONG PLANER AND SHAPER TOOLS

CONVENIENT — EFFICIENT — ECONOMICAL

One of these tools is effectively worth a dozen forged tools.

Fig. 1 shows the ARMSTRONG Planer Tool at work in close corners, giving a good general idea of clearance obtained. It shows also a few of the angles at which the cutter can be set. A job similar to one shown could be finished with the ARMSTRONG Planer Tool without shifting position of the work on the bed.

Fig. 2 shows the ARMSTRONG Planer Tool cutting a keyway with the cutter reversed and the tool turned around, thus throwing the cutting point behind center of tool and working as a "goose neck" tool.



Fig. 1



Fig. 2

Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	Size of Holder	Size of Cutter	LIST PRICE Tool Complete	No.
39*	3/8 x 7/8 x 5 1/2	1/4 x 1/4	\$ 6.40	39*
40*	1/2 x 1 x 6	1/4 x 3/8	7.45	40*
401*	5/8 x 1 1/4 x 8 1/2	5/16 x 7/16	9.60	401*
41*	3/4 x 1 1/2 x 10	3/8 x 1/2	12.55	41*
42	1 1/8 x 1 3/4 x 13	1/2 x 3/4	19.85	42
43	1 3/8 x 2 x 16	5/8 x 7/8	34.80	43
44	1 7/8 x 2 1/4 x 19	3/4 x 1	62.40	44
45	2 1/8 x 2 3/4 x 22	7/8 x 1 1/8	91.20	45

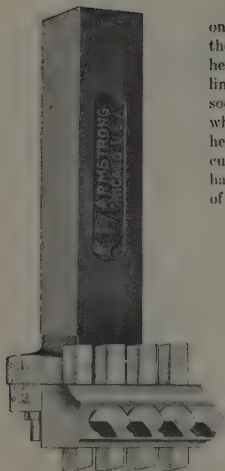
* Shaper sizes

Note—ARMSTRONG Carbide Tool Holders listed on pages 10 to 12 are also well adapted to planer and shaper work.

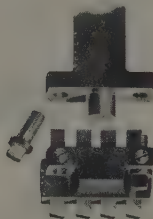


ARMSTRONG GANG PLANER TOOL

FOR PLANING LARGE SURFACES



This tool is especially adapted for surfacing large castings, and on this class of work it will effect a saving of 50 to 75 per cent in the time required to do the same job with a single point tool. The head is solidly secured to the shank, upon which it swivels to a limited degree, by means of a deep and closely fitted tongue and socket, and when set its position is fixed by two steel collar screws, while two stop screws render slipping of head impossible. The head is graduated, thus enabling the tool to be quickly and accurately set to any desired feed. This makes it possible to always have the tool cutting at the greatest speed practicable on metals of varying degrees of hardness.



As each chip is comparatively light, with this tool a planer will carry with ease a feed and depth of cut much greater than is possible when using an ordinary tool, and there is much less tendency to "break out" at the end of cut.

Each tool is drop forged from a special steel and is accurately machined, heat treated and hardened.

Each tool is boxed separately and price includes one set (four) ARMSTRONG High Speed cutters, wrench and grinding gauge.

For extra High Speed cutter bits see page 54.

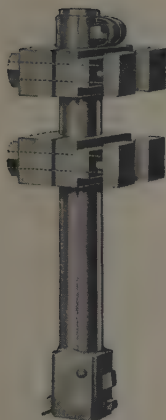
No.	Size of Shank	Length Over All	Size of Cutter	Feed Adjustment	LIST PRICE Tool Complete	No.
61	1 1/4 x 1 3/4 x 7 1/2	10	3/8 x 1/2	0 to 1/4	\$41.60	61
62	1 5/8 x 2 1/4 x 9	12	1/2 x 3/4	0 to 3/8	70.40	62
63	2 x 2 1/2 x 11	14	5/8 x 7/8	0 to 1/2	96.00	63

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).



ARMSTRONG SLOTTER TOOL

WITH HOLLOW BAR



This tool is very stiff and easily adjustable to different lengths of stroke, and can be rotated conveniently for working into corners or in different positions. It has a spring relief block which saves the cutter point from wear and tear of the return stroke, and is so constructed as to be protected from chips and dirt. The cutter is fixed at an angle which allows it to take a clean curling chip without excessive top grinding, and as the point can be projected beyond the end of the bar it is possible to cut right down to the table.

Note—As there is considerable difference in the size of T slots of machines of different manufacture, the clamps and bolt heads of this tool are made of ample size to allow for fitting.

Fitting—The following will be made for fitting to dimensions:
No. 91 \$4.00, net, Nos. 92 and 93 \$6.00 net, Nos. 94 and 95 \$12.00 net.

Each tool is boxed separately and price includes wrench and one ARMSTRONG High Speed cutter bit.

For extra High Speed cutter bits see page 54.

No.	For Slotting Machine Inch Stroke	Diameter of Bar	Length Over All	Size of Cutter	LIST PRICE Tool Complete	No.
91	6 and 8	1 1/2	16	1/2 x 3/4	\$ 60.00	91
92	10 and 12	2	22	1/2 x 3/4	108.00	92
93	14 and 16	2 1/4	27	5/8 x 7/8	156.00	93
94	18 and 20	2 1/2	32	3/4 x 1	220.80	94
95	22 and 24	2 3/4	37	7/8 x 1 1/8	288.00	95

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).

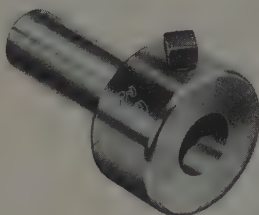


ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

PLAIN DRILL HOLDERS

ARMSTRONG Plain Drill Holders are used for holding drills, reamers, counterbores, hollow mills and flat cutters.



Each tool is made from a special steel and is hardened all over; shank and bushing hole are accurately ground.

Each tool is boxed separately and price includes wrench.

No.	Dimensions of Shank			Dimensions of Head			Extreme Length	LIST PRICE Tool Complete	No.
	Outside Diameter	Diameter Hole	Length	Outside Diameter	Diameter Hole	Depth Hole			
600	5/8	13/32	2	1 3/4	3/4	3/4	3	\$ 6.30	600
601	3/4	13/32	2	1 3/4	3/4	3/4	3	6.30	601
602	7/8	15/32	2 3/8	2	7/8	7/8	3 1/2	7.50	602
603	1	17/32	2 3/4	2 1/4	1	1	4	8.70	603
604	1 1/4	25/32	3 1/2	2 7/8	1 1/4	1 1/4	5 1/8	10.00	604
605	1 1/2	1 1/32	4 3/8	3	1 1/2	1 1/2	6 1/4	12.50	605

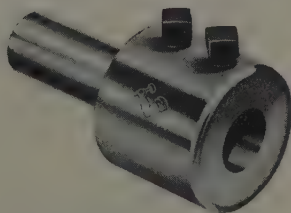


ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

DRILL HOLDERS

ARMSTRONG Drill Holders are designed to hold either straight shank or taper shank drills. The bushing hole is extra deep and long bushings can be used to reach across several flutes on the drill. A rigid hold on the drill can be obtained under all conditions.



Each tool is made from a special steel and is hardened all over; shank and bushing hole are accurately ground.

Each tool is boxed separately and price includes wrench.

No.	Dimensions of Shank			Dimensions of Head			Extreme Length	LIST PRICE Tool Complete	No.
	Outside Diameter	Diameter Hole	Length	Outside Diameter	Diameter Hole	Depth Hole			
610	5/8	13/32	2 1/8	1 3/4	3/4	1 1/2	3 7/8	\$ 8.60	610
611	3/4	13/32	2 1/8	1 3/4	3/4	1 1/2	3 7/8	8.60	611
612	7/8	15/32	2 1/4	2	7/8	1 3/4	4 1/4	9.40	612
613	1	17/32	2 3/8	2 1/4	1	1 13/16	4 1/2	11.30	613
614	1 1/4	25/32	3	2 7/8	1 1/4	2 1/8	5 1/2	12.50	614
615	1 1/2	1 1/32	3 5/8	3	1 1/2	2 3/8	6 1/2	15.70	615



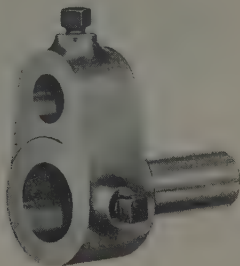
ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

PLAIN TURNERS

Drop Forged Steel

ARMSTRONG Plain Turner Tools are designed to combine a single cutter turning set up with drilling and boring operations. The top hole takes cutter holders (shown on pages 47, 48 and 49), while the center tool bushing hole locates drills, boring bars and other similar tools. Plain turners may be held independently or mounted in multiple heads by using tool shank bushings.



Each tool is drop forged from a special steel, hardened all over. The center hole and shank are accurately ground.

Each tool is boxed separately and price includes wrench.

No.	Dimensions of Shank			Dimensions of Head			Turning Capacity		Extreme Length	LIST PRICE Tool Complete	No.
	Outside Diameter	Diameter Hole	Length	Diam. Top Hole	Diam. Center Hole	Depth Center Hole	Diameter	Max. Length			
620	5/8	3/8	2 1/2	3/4	3/4	1 1/8	1/2 to 1 1/4	2	3 7/8	\$16.30	620
621	7/8	1/2	2 1/2	3/4	3/4	1 1/8	1/2 to 1 1/4	2	3 7/8	16.30	621
622	1	5/8	3	7/8	1 1/4	1 1/8	1/2 to 2	2 3/4	4 1/2	18.80	622
623	1 1/4	3/4	3 1/4	1	1 5/8	1 3/8	3/4 to 2	3 1/4	5 1/8	23.80	623
624	1 1/2	7/8	3 5/8	1 1/4	1 5/8	1 3/8	2 1/4 to 3 1/2	4 1/4	5 1/2	31.30	624
625	1 3/4	1	3 7/8	1 1/2	1 3/4	1 1/2	3 3/4 to 5	5	5 15/16	37.50	625



ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

STRAIGHT CUTTER HOLDERS

ARMSTRONG Straight Cutter Holders are used for turning, facing, chamfering, boring and similar work. The tool slot will take either square or flat cutters which may be ground to any required form. It can be held in the plain turners described on page 46 or mounted in multiple heads by using tool shank bushings. The tool is moved in or out of the support for length of cut



Each tool is hardened all over and the shank is accurately ground.

Each tool is boxed separately and price includes one ARMSTRONG High Speed cutter bit and wrench.

For extra High Speed cutter bits see page 54.

No.	Diam. of Shank	Length of Shank	Size of Cutter	Extreme Length	LIST PRICE Tool Complete	No.
630	5/8	2 1/2	1/4 x 1/4 x 1 3/4	3 1/8	\$10.00	630
631	3/4	2 1/2	1/4 x 1/4 x 1 3/4	3 1/8	10.00	631
632	7/8	3 1/4	3/8 x 3/8 x 2 5/8	4	12.00	632
633	1	4	1/2 x 1/2 x 3 1/4	4 7/8	13.80	633
634	1 1/4	4 3/4	5/8 x 5/8 x 4	5 7/8	16.30	634
635	1 1/2	5 1/2	3/4 x 3/4 x 5	6 3/4	18.70	635

For best results use ARMSTRONG High Speed Cutter Bits (see Page 54).

For ARMIDE and ARMALLOY Cutters see pages 57, 59 to 61.



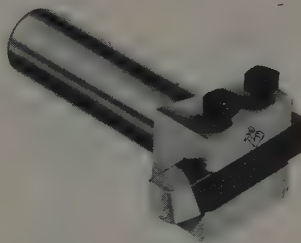
ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

ANGLE CUTTER HOLDERS

In the ARMSTRONG Angle Cutter Holder, the cutter is held at an angle of 15° which provides clearance necessary for turning close to a shoulder or to chuck jaws.

Used for turning and boring, this tool can be held in the plain turners described on page 46 or mounted in multiple heads by using tool shank bushings. The tool is moved in or out of the support for length of cut.



Each tool is hardened all over and the shank is accurately ground.

Each tool is boxed separately and price includes one ARMSTRONG High Speed cutter bit and wrench.

For extra High Speed cutter bits see page 54.

No.	Diam. of Shank	Length of Shank	Size of Cutter	Extreme Length	LIST PRICE Tool Complete	No.
640	5/8	2 1/2	1/4 x 1/4 x 1 3/4	3 1/4	\$10.00	640
641	3/4	2 1/2	1/4 x 1/4 x 1 3/4	3 1/4	10.00	641
642	7/8	3 1/4	3/8 x 3/8 x 2 5/8	4 1/4	12.00	642
643	1	4	1/2 x 1/2 x 3 1/4	5 1/4	13.80	643
644	1 1/4	4 3/4	5/8 x 5/8 x 4	6 1/4	16.30	644
645	1 1/2	5 1/2	3/4 x 3/4 x 5	7 1/4	18.70	645

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).

For ARMIDE and ARMALLOY Cutters see pages 57, 59 to 61.



ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

MULTIPLE CUTTER HOLDERS

In ARMSTRONG Multiple Cutter Holders, two cutters can be held in various positions for turning or boring two diameters at the same time and for combining facing or chamfering with turning or boring operations.

Multiple cutter holders can be held in the plain turners described on page 46, or mounted in second heads by using tool shank bushings. The tool is moved in or out of the support for length of cut.

When setting the cutter screws, the sides of the tool are kept from springing apart by the tie screws and bushings which should always be used. Tie screws and set screws are interchangeable in the various holes so that the cutters may be set as desired.



Each tool is hardened all over and the shank is accurately ground.

Each tool is boxed separately and price includes two ARMSTRONG High Speed cutter bits and wrench.

For extra High Speed cutter bits see page 54.

No.	Diam. of Shank	Length of Shank	Size of Cutter	Extreme Length	LIST PRICE Tool Complete	No.
650	5/8	2 1/2	1/4 x 1/4 x 1 3/4	4 5/8	\$11.30	650
651	3/4	2 1/2	1/4 x 1/4 x 1 3/4	4 5/8	11.30	651
652	7/8	3 1/4	3/8 x 3/8 x 2 5/8	5 13/16	13.20	652
653	1	3 1/4	1/2 x 1/2 x 3 1/4	6 1/4	15.70	653
654	1 1/4	3 1/2	5/8 x 5/8 x 4	7 1/8	18.20	654
655	1 1/2	4 1/2	3/4 x 3/4 x 5	8 7/8	20.70	655

For best results use ARMSTRONG High Speed Cutter Bits (see page 54).

For ARMIDE and ARMALLOY Cutters see pages 57, 59 to 61.



ARMSTRONG TOOL HOLDERS

For Screw Machines and Turret Lathes

FACING TOOLS

ARMSTRONG Facing Tools are used for machining pulleys, gear hubs, flanges and like parts. A solid disc can be faced to the center or the cutters may be ground and adjusted for grooving, recessing, face-forming and counterboring. In conjunction with the latter operations, drills, counterbores, pilots and other tools can be held in the center hole.



Each tool is hardened all over. The shank and center hole are accurately ground.

Each tool is boxed separately and price includes two ARMSTRONG High Speed cutter bits and wrench.

No.	Dimensions of Shank			Dimensions of Head			Facing Capacity 0 to Max. Diam.	Extreme Length	LIST PRICE Tool Complete	No.
	Outside Diam.	Diam. Hole	Length	Width	Size of Cutter Bit	Diam. Center Hole				
660	5/8	25/64	1 7/8	2 3/4	1/4 x 3/4	5/8	0 to 3	3 1/4	\$20.00	660
661	3/4	25/64	1 7/8	2 3/4	1/4 x 3/4	5/8	0 to 3	3 1/4	20.00	661
662	7/8	29/64	2 7/16	3 1/4	1/4 x 3/4	5/8	0 to 3 1/2	4	25.00	662
663	1	17/32	2 1/4	4	5/16 x 7/8	3/4	0 to 4 1/2	4	31.30	663
664	1 1/4	21/32	2 15/16	4 3/4	3/8 x 1	7/8	0 to 5 1/4	5 1/2	38.80	664
665	1 1/2	29/32	3 3/4	5	3/8 x 1	7/8	0 to 5 3/4	5 1/2	45.00	665

EXTRA HIGH SPEED CUTTER BITS

No.	For Tool No.	Size	LIST PRICE Each
8455A	660	1/4 x 3/4 x 1 1/4	\$0.70
8455B	661	1/4 x 3/4 x 1 7/16	.70
8455C	662	1/4 x 3/4 x 1 3/4	.70
8456	663	5/16 x 7/8 x 2 1/8	1.10
8457A	664	3/8 x 1 x 2 1/2	1.60
8457B	665	3/8 x 1 x 2 5/8	1.60



ARMSTRONG TOOL HOLDERS

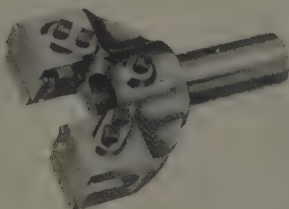
For Screw Machines and Turret Lathes

TURRET KNURLING TOOLS

Drop Forged Steel

ARMSTRONG Turret Knurling Tools are designed to hold standard size knurls. Any pattern or pitch knurling may be produced by running out the cross-slides, removing the knurl pins and inserting the knurls required.

The knurling capacity of this tool can be quickly adjusted to any diameter within range simply by turning the cross-slide feed screws in or out. The cross-slides are locked at proper adjustment by set screws. When necessary a bushing may be used in the center hole to support the work.



Each tool is drop forged from a special steel, is accurately machined and hardened throughout. Knurl pins and hob-cut knurls are tempered tool steel.

Each tool is boxed separately and price includes one pair of medium diamond knurls with standard face.

For a complete description of ARMSTRONG extra Hob-Cut Knurls furnished see page 37.

No.	Dimensions of Shank			Knurling Capacity		Max. Width Head	Extreme Length	LIST PRICE Tool Complete	No.
	Diam.	Diam. Hole	Length	Diameter	Max. Length				
670	5/8	7/16	2 1/2	1/8 to 3/4	1 5/8	3 1/2	4 13/16	\$48.00	670
671	1	7/16	2 1/2	1/8 to 3/4	1 5/8	3 1/2	4 13/16	48.00	671
672	1 1/4	21/32	3	1/8 to 1	2 1/2	4 3/4	6 1/8	75.00	672
673	1 1/2	13/16	3 7/16	1/4 to 1 1/2	3 1/4	6 1/4	7 11/16	100.00	673
674	1 3/4	29/32	3 5/8	1/2 to 2	4	7 3/8	7 7/8	125.00	674

For best results use ARMSTRONG Hob-Cut Knurls (see page 37).



ARMSTRONG HIGH SPEED — ARMALLOY — ARMIDE

Bits, Blades, and Cutters

A Complete Service for All Materials and Cutting Speeds

For maximum production, the quality of cutting tools is so important in determining the performance of both men and machines that we strongly recommend the use of ARMSTRONG HIGH SPEED, ARMALLOY and ARMIDE Bits, Blades, and Cutters. ARMSTRONG Bits, Blades and Cutters are all made of the finest cutting material obtainable and have been especially designed for use with ARMSTRONG TOOL HOLDERS.

For general machining at the speeds indicated, we recommend:

ARMSTRONG HIGH SPEED TO 150 F.P.M.

ARMSTRONG HIGH SPEED Bits, Blades and Cutters are strictly speaking fine tools in the rough. Each is cut to proper size, is carefully heat treated, hardened, tempered and tested. ARMSTRONG HIGH SPEED steel is a super-steel that makes practicable the machining of from 25 to 100 more feet per minute, and at the same time reduces tool grinding materially.

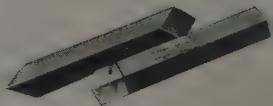
ARMALLOY TO 300 F.P.M.

ARMSTRONG ARMALLOY Cutter Bits and Blades are made from an improved "cast alloy" with a hardness between that of the best high speed steels and the sintered carbides. Because of its extreme hardness, ARMALLOY may be used for both roughing and finishing cuts in practically all machining operations on steel, malleable iron, cast iron, non-ferrous metals, rubber and plastics. ARMALLOY Cutter Bits should be used in ARMSTRONG "C-A" TOOL HOLDERS, described on page 7.

ARMIDE TO 600 F.P.M.

ARMIDE is a sintered-carbide cutting material which approaches the diamond in hardness. ARMIDE will machine the hardest and toughest steels and sand-filled castings with ease, as well as hard rubber, plastics, and even glass. Because of the extreme hardness of ARMIDE, cutter bits tipped with this material will hold their cutting edge much longer than the finest tool steels and will machine from 10 to 100 times as many pieces between grindings.

ARMIDE Carbide-tipped Cutters come in two grades—ARMIDE (red) for machining steel, and ARMIDE (gray) for machining cast iron, brass, bronze, aluminum, and non-metallics. ARMIDE Carbide-tipped Cutters should be used with ARMSTRONG CARBIDE TOOL HOLDERS described on page 10.



ARMSTRONG Bits, Blades and Cutters cut cutting costs on all machines.



ARMSTRONG FINISHED FORM CUTTERS

For ARMSTRONG Tool Holders
High Speed Steel



1
Left Hand
Turning
Tool



2
Round Nose
Turning
Tool



3
Right Hand
Turning
Tool



4
Left Hand
Corner
Turning
Tool



5
Threading
Tool



6
Left Hand
Corner
Turning
Tool



7
Left Hand
Side
Turning
Tool



8
Square Nose
Turning
Tool



9
Right Hand
Side
Turning
Tool



10
Brass
Tool

ARMSTRONG Finished Form Cutters are made from the best high speed steel. They are heat treated, hardened, ground to the form shown and ready for use.

Finished form cutters are boxed in sets of 10 cutters, shapes 1 to 10. When ordering sets please specify catalog numbers. When ordering single cutters order by shape number.

No. Set	Size of Cutter Square	Length	LIST PRICE Each Any Shape	LIST PRICE Set Complete Shapes 1 to 10	No. Set
0415	1/4	2 1/8	\$0.50	\$4.80	0415
0405	5/16	2 3/4	.75	7.20	0405
0406	3/8	3 1/4	1.05	10.40	0406
0407	7/16	3 3/4	1.60	16.00	0407
0408	1/2	4 1/4	2.35	23.20	0408

Special cutter forms (or modifications of those shown) if needed will be suggested by the character of the work to be done and the nature of the metal to be machined.

We will furnish on request a chart showing the protractor angles to which cutters for ARMSTRONG Tool Holders should be ground for average work.

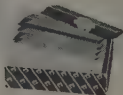


ARMSTRONG HIGH SPEED STEEL CUTTER BITS

Hardened

**Require Grinding Only to Make Them Ready for Use in
ARMSTRONG Tool Holders**

High Speed Steel




Buy
ARMSTRONG
High Speed Bits
in Standard
Packages

ARMSTRONG High Speed Bits are cut to proper size, carefully heat treated, hardened tempered and tested. Made of a super grade high speed steel ARMSTRONG High Speed Bits make practicable the machining of from 25 to 100 more feet per minute and at the same time reduce tool grinding materially. When ordering, please specify catalog number.



Squares for Turning and Boring Tools

For Turning Tools				For Boring Tools				
No.	Size	Length	LIST PRICE Each	No.	Bar Angle	Size	Length	LIST PRICE Each
2301	3 16	1 3/4	\$0.15	2321	90°	3 16	1	\$0.10
2302	1/4	2 1/8	.20	2368	30°	3 16	1 1/8	.10
2303	5 16	2 3/4	.35	2322	45°	3 16	1 1/4	.10
2304	3 8	3 1/4	.55	2323	90°	1/4	1 1/4	.12
2305	7 16	3 3/4	.90	2369	30°	1/4	1 1/2	.18
2306	1 2	4 1/4	1.30	2324	45°	1/4	1 3/4	.18
2307	5 8	5	2.35	2325	90°	5/16	1 1/2	.24
2308	3 4	5 3/4	3.85	2370	30°	5/16	1 7/8	.30
2309	7 8	6 1/2	5.85	2326	45°	5/16	2 1/4	.30
2310	1	7 1/4	8.35	2327	90°	3/8	1 7/8	.40
2311	1 1/8	8	11.35	2371	30°	3/8	2 1/4	.50
2312	1 1/4	9 1/2	21.05	2328	45°	3/8	2 5/8	.50
 Flats for Planer, Slotter and Gang Planer Tools				2329	90°	7 16	2 1/8	.55
				2372	30°	7 16	2 1/2	.75
				2330	45°	7 16	2 7/8	.75
				2331	90°	1/2	2 3/8	.80
				2373	30°	1 2	2 13/16	1.00
				2332	45°	1 2	3 1/4	1.00
				2333	90°	5/8	2 3/4	1.40
				2374	30°	5/8	3 3/8	1.80
				2334	45°	5/8	4	1.80
				2335	90°	3/4	3 1/8	2.75
2351	1 4 x 3 8	2 1/2	\$0.35	2375	30°	3/4	4 1/16	3.40
2352	5/16 x 7/16	3	.55	2336	45°	3/4	5	3.40
2353	3/8 x 1/2	3 1/2	.80					
2354	1/2 x 3/4	4 1/4	1.95					
2355	5/8 x 7/8	5	3.35					
2356	3/4 x 1	6	5.00					
2357	7/8 x 1 1/8	7	8.20					

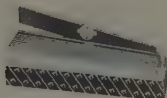


ARMSTRONG CUTTER BLADES

FINISHED

Ready for Use in ARMSTRONG Cutting-Off and Side Tools

High Speed Steel



Buy
ARMSTRONG
High Speed
Cutter Blades
in standard packages

ARMSTRONG Cutter Blades are made from the finest high speed steel, are heat treated, hardened, ground on the edges and ready to use in ARMSTRONG Cutting-Off and Side Tools. Approximate sizes of blades are shown; actual sizes are somewhat less. When ordering, please specify catalog number and tool number.

BEVEL FOR CUTTING-OFF TOOLS

No. Left Hand	No. Straight Shank	No. Right Hand	Size	Length	For Tool Numbers	LIST PRICE Each
2451	2401	2491	3/32 x 1/2	4 1/2	19-29L-29R	\$0.95
2452	2402	2492	3/32 x 5/8	5	20-30L-30R	1.05
2453	2403	2493	1/8 x 3/4	6	21-31L-31R	1.45
2454	2404	2494	1/8 x 7/8	7	22-32L-32R	2.10
2455	2405	2495	3/16 x 1	8	23-33L-33R	3.45
2456	2406	2496	3/16 x 1 1/8	9	24-34L-34R	4.65
2457	2407	2497	1/4 x 1 1/4	10	25-35L-35R	6.40
2458	2408	2498	1/4 x 1 3/8	11	26-36L-36R	7.45

SPECIAL SHAPE FOR SIDE TOOLS

No. Left Hand	No. Right Hand	For Tool No.	No. Left Hand	No. Right Hand	For Tool No.	Size	Length	LIST PRICE Each
2511	2621	69	2651	2661	79	1/8 x 1/2	4 1/2	\$ 0.95
2512	2622	70	2652	2662	80	5/32 x 5/8	5	1.45
2513	2623	71	2653	2663	81	3/16 x 3/4	6	2.25
2514	2624	72	2654	2664	82	1/4 x 7/8	7	3.70
2515	2625	73	2655	2665	83	5/16 x 1	8	5.45
2516	2626	74	2656	2666	84	3/8 x 1 1/4	9	8.00
2517	2627	75	2657	2667	85	7/16 x 1 3/8	10	9.60
2518	2628	76	2658	2668	86	1/2 x 1 1/2	11	12.65



ARMSTRONG UNFINISHED CUTTER BLADES HARDENED

Require Grinding Only to Make Them Ready for Use in
ARMSTRONG Cutting-Off Side Tools

HIGH SPEED STEEL

ARMSTRONG High Speed Cutter Blades are cut to proper size, carefully heat treated, hardened, tempered and tested. When ordering, please specify catalog number.

BEVEL FOR CUTTING-OFF TOOLS

End View of Blade	No.	Size	Length	For Tool Numbers	LIST PRICE Each	No.
	2441	3/32 x 1/2	4 1/2	19, 29-L, 29-R	\$0.40	2441
	2442	3/32 x 5/8	5	20, 30-L, 30-R	.40	2442
	2443	1/8 x 3/4	6	21, 31-L, 31-R	.65	2443
	2444	1/8 x 7/8	7	22, 32-L, 32-R	.95	2444
	2445	3/16 x 1	8	23, 33-L, 33-R	1.75	2445
	2446	3/16 x 1 1/8	9	24, 34-L, 34-R	2.20	2446
	2447	1/4 x 1 1/4	10	25, 35-L, 35-R	3.40	2447
	2448	1/4 x 1 3/8	11	26, 36-L, 36-R	4.00	2448

SPECIAL SHAPE FOR SIDE TOOLS

End View of Blade	No.	Shape	Length	For Tool Numbers	LIST PRICE Each	No.
	2461	1/8 x 1/2	4 1/2	69-L, 69-R, 79-L, 79-R	\$0.45	2461
	2462	5/32 x 5/8	5	70-L, 70-R, 80-L, 80-R	.50	2462
	2463	3/16 x 3/4	6	71-L, 71-R, 81-L, 81-R	.85	2463
	2464	1/4 x 7/8	7	72-L, 72-R, 82-L, 82-R	1.45	2464
	2465	5/16 x 1	8	73-L, 73-R, 83-L, 83-R	2.20	2465
	2466	3/8 x 1 1/4	9	74-L, 74-R, 84-L, 84-R	3.40	2466
	2467	7/16 x 1 3/8	10	75-L, 75-R, 85-L, 85-R	4.60	2467
	2468	1/2 x 1 1/2	11	76-L, 76-R, 86-L, 86-R	7.35	2468

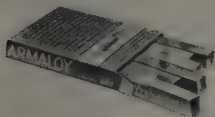
Note:—Bevel and special shapes are rolled to approximate size, but require grinding on edges to bring to exact size fitting ARMSTRONG Cutting-Off and Side Tool Holders. For prices of finished cutters fitting cutting-off and side tool holders, see page 55.



ARMSTRONG ARMALLOY CUTTER BITS

For use with ARMSTRONG "C-A" Tool Holders

ARMSTRONG ARMALLOY Cutter Bits are made from an improved "cast-alloy" with a hardness between that of the best high speed steels and the sintered carbides. Because of its extreme hardness, ARMALLOY may be used for both roughing and finishing cuts in practically all machining operations on steel, malleable iron, cast iron, non-ferrous metals, rubber and plastics. It is particularly suited to cutting tools used on modern high production machines where sufficient speed and feed can be obtained to take advantage of its high cutting efficiency.



Buy ARMALLOY Cutter
Bits in Standard Packages

ARMALLOY Cutter Bits come ready to grind to cutter shape. Each is a finished tool surface ground to exact size to fit the corresponding ARMSTRONG "C-A" Tool Holder. (For ARMSTRONG "C-A" Tool Holders see page 7.

No.	Size of Cutter	For Tool Holder Numbers	LIST PRICE Each	No.
2641	1/4 x 1/4 x 2 1/8	X-0-S, X-0-L, X-0-R	\$0.75	2641
2642	5/16 x 5/16 x 2 1/2	X-1-S, X-1-L, X-1-R	1.19	2642
2643	3/8 x 3/8 x 3	X-2-S, X-2-L, X-2-R	1.72	2643
2644	7/16 x 7/16 x 3 1/2	X-3-S, X-3-L, X-3-R	2.50	2644
2645	1/2 x 1/2 x 4	X-4-S, X-4-L, X-4-R	3.50	2645
2646	5/8 x 5/8 x 4 1/2	X-5-S, X-5-L, X-5-R	5.83	2646
2647	3/4 x 3/4 x 5		9.00	2647

DIRECTIONS FOR GRINDING ARMALLOY CUTTERS

ARMALLOY is a cast alloy metal.

Like all castings the exterior surface of ARMALLOY is hardest; therefore, do not grind into the cutter any deeper than is necessary.

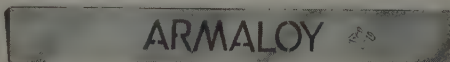
In regrinding the cutter, remove just enough metal to form the proper cutting edge.

After grinding, remove the wire edge with an oil stone.



ARMSTRONG ARMALLOY CUT-OFF BLADES

ARMALLOY Cut-off Blades are designed for use in standard ARMSTRONG cutting-off tools. Because of their great strength and wide blade clamping area, these standard ARMSTRONG Tool Holders are ideally designed for use with either ARMSTRONG High Speed or ARMALLOY Blades.



ARMALLOY Cut-off Blades come ground to size and shape. They are of "bevelled" design, tapered on both sides for clearance. When ordering, please specify catalog number.

Buy ARMSTRONG ARMALLOY Cut-off Blades in standard packages.

No.	Size of Blade	For Cut-off Tool Numbers	Standard Package Quantity	LIST PRICE Each	No.
2669	1/8 x 3/4 x 6	21, 31-L, 31-R	12	\$2.05	2669
2670	1/8 x 7/8 x 7	22, 32-L, 32-R	12	2.75	2670
2671	3/16 x 1 x 7	23, 33-L, 33-R	6	4.85	2671
2672	3/16 x 1 1/8 x 8	24, 34-L, 34-R	6	6.00	2672
2673	1/4 x 1 1/4 x 8	25, 35-L, 35-R	4	7.40	2673

ARMSTRONG "C-A" TOOL SETS

ARMSTRONG "C-A" Sets are available in five sizes. Each set consists of one straight shank, one right-hand offset and one left-hand offset ARMSTRONG "C-A" Tool Holder, and four ARMALLOY cutters. Each set is furnished complete with one wrench and steel case.

For ARMSTRONG "C-A" Tool Holders see page 7.



No.	Size of Cutter	Tool Holder Shank Size	LIST PRICE Set Complete	No.
0466	1/4 x 1/4	3/8 x 7/8 x 6	\$29.55	0466
0467	5/16 x 5/16	1/2 x 1 1/8 x 7	36.15	0467
0468	3/8 x 3/8	5/8 x 1 3/8 x 8	44.60	0468
0469	7/16 x 7/16	3/4 x 1 5/8 x 9	62.65	0469
0470	1/2 x 1/2	7/8 x 1 3/4 x 10	83.15	0470



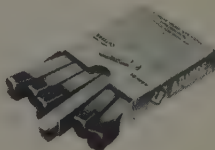
ARMSTRONG

ARMIDE *Carbide Tipped* CUTTERS

For Use in ARMSTRONG Carbide Tool Holders

ARMIDE is a sintered-carbide cutting material which approaches the diamond in hardness. ARMIDE will machine the hardest and toughest steels and sand-filled castings with ease, as well as hard rubber, plastics, and even glass. Because of the extreme hardness of ARMIDE, cutter bits tipped with this material will hold their cutting edge much longer than the finest tool steels and will machine from 10 to 100 times as many pieces between grindings.

ARMIDE-tipped tools offer special advantages on machining operations involving: (1) Long runs on cast iron, (2) Tough alloy steels, (3) Machining of hardened parts without annealing and subsequent re-hardening, as in maintenance work, (4) High speed machining, and (5) Machining of unusual materials.



Buy Armide
Cutters in
Standard Packages



Form 7



Form 4



Form 1



Form 12



Form 14



Form 13



Form 15

ARMIDE Carbide Tipped Cutters are designed for use in ARMSTRONG Carbide TOOL HOLDERS. They come in two grades ARMIDE (Red) for machining steel, and ARMIDE (Gray) for machining cast iron, brass, bronze, aluminum, and non-metallics. These grades of ARMIDE are distinguished by the corresponding color of the cutter-bit shank.

Both ARMIDE (Red) ARMIDE (Gray) Cutter-Bits come ready-ground in seven standard cutter shapes. The 60° Formed Threading Cutter (Form 15) is furnished in RED only.

When ordering, please specify (1) catalog number, (2) Whether ARMIDE RED (For steel) or ARMIDE GRAY (For cast iron and non-ferrous machining) and (3) Quantity.

Note: Unless Red or Gray is specified on order, ARMIDE GRAY (for cast iron and non-ferrous machining) will be shipped.

For selected ARMIDE Tool Sets see page 62.



ARMSTRONG

ARMIDE *Carbide Tipped* CUTTERS

Unless Red or Gray is specified on order, ARMIDE (Gray) for cast iron and non-ferrous machining will always be shipped (see page 59).

SQUARE SHANK TURNING CUTTERS

LEFT HAND FORM 7		SHANK SIZE			TIP SIZE			RIGHT HAND FORM 4	
No.	PRICE Each Cutter	Height	Width	Length	Thickness	Width	Length	No.	PRICE Each Cutter
M-71	\$0.95	1/4	1/4	1 3/4	3/32	3/16	5/16	M-41	\$0.95
M-72	.95	5/16	5/16	2 1/4	3/32	1/4	1/2	M-42	.95
M-73	1.00	3/8	3/8	2 1/2	3/32	1/4	1/2	M-43	1.00
M-74	1.50	7/16	7/16	3	3/32	1/4	1/2	M-44	1.50
M-75	1.50	1/2	1/2	3 1/2	1/8	5/16	5/8	M-45	1.50
M-77	2.00	5/8	5/8	4	5/32	3/8	3/4	M-47	2.00
M-78	2.15	3/4	3/4	4 1/2	3/16	7/16	13/16	M-48	2.15

HEAVY DUTY TURNING CUTTERS

H-M-71	\$1.55	1/4	3/8	1 3/4	3/32	3/16	5/16	H-M-41	\$1.55
H-M-72	1.65	5/16	7/16	2 1/4	3/32	1/4	1/2	H-M-42	1.65
H-M-73	2.05	3/8	1/2	2 1/2	3/32	1/4	1/2	H-M-43	2.05
H-M-74	2.30	7/16	9/16	3	3/32	1/4	1/2	H-M-44	2.30
H-M-75	2.85	1/2	3/4	3 1/2	1/8	5/16	5/8	H-M-45	2.85
H-M-77	3.15	5/8	7/8	4	5/32	3/8	3/4	H-M-47	3.15
H-M-78	3.70	3/4	1	4 1/2	3/16	7/16	13/16	H-M-48	3.70

SQUARE SHANK CUTTERS

SQUARE NOSE FORM 1		SHANK SIZE			TIP SIZE				80° FORM 12	
No.	PRICE Each Cutter	Height	Width	Length	Thickness	Width	Length	Radius	No.	PRICE Each Cutter
M-11	\$0.95	1/4	1/4	1 3/4	1/16	1/4	5/16	1/32	M-121	\$1.10
M-12	.95	5/16	5/16	2 1/4	3/32	5/16	3/8	1/32	M-122	1.10
M-13	1.00	3/8	3/8	2 1/2	3/32	3/8	*1/2	1/16	M-123	1.30
M-14	1.50	7/16	7/16	3	3/32	7/16	1/2	1/16	M-124	1.60
M-15	1.50	1/2	1/2	3 1/2	1/8	1/2	*9/16	1/16	M-125	1.60
M-17	2.20	5/8	5/8	4	5/32	5/8	5/8	3/32	M-127	2.30
M-18	3.00	3/4	3/4	4 1/2	3/16	3/4	3/4	3/32	M-128	3.20

HEAVY DUTY CUTTERS

H-M-11	\$1.55	1/4	3/8	1 3/4	1/16	1/4	5/16	1/32	H-M-121	\$1.75
H-M-12	1.65	5/16	7/16	2 1/4	3/32	5/16	3/8	1/32	H-M-122	1.85
H-M-13	2.05	3/8	1/2	2 1/2	3/32	3/8	1/2	1/16	H-M-123	2.40
H-M-14	2.30	7/16	9/16	3	3/32	7/16	1/2	1/16	H-M-124	2.50
H-M-15	2.85	1/2	3/4	3 1/2	1/8	1/2	9/16	1/16	H-M-125	3.05
H-M-17	3.40	5/8	7/8	4	5/32	5/8	5/8	3/32	H-M-127	3.50
H-M-18	4.90	3/4	1	4 1/2	3/16	3/4	3/4	3/32	H-M-128	5.15

*M-13 3/8, M-15 1/2.

See page 10 for Carbide Tool Holders, especially designed for use with ARMIDE Cutters.



ARMSTRONG

ARMIDE *Carbide Tipped* CUTTERS

Unless Red or Gray is specified on order, ARMIDE (Gray) for cast iron and non-ferrous machining will always be shipped (see page 59).



LEFT HAND FORM 14		SQUARE SHANK TURNING CUTTERS						RIGHT HAND FORM 13	
No.	PRICE Each Cutter	SHANK SIZE			TIP SIZE			No.	PRICE Each Cutter
		Height	Width	Length	Thickness	Width	Length		
M-141	\$1.00	1/4	1/4	1 3/4	3/32	3/16	5/16	M-131	\$1.00
M-142	1.00	5/16	5/16	2 1/4	3/32	1/4	1/2	M-132	1.00
M-143	1.15	3/8	3/8	2 1/2	3/32	1/4	1/2	M-133	1.15
M-144	1.50	7/16	7/16	3	3/32	1/4	1/2	M-134	1.50
M-145	1.50	1/2	1/2	3 1/2	1/8	5/16	5/8	M-135	1.50
M-147	2.00	5/8	5/8	4	5/32	3/8	3/4	M-137	2.00
M-148	2.35	3/4	3/4	4 1/2	3/16	7/16	13/16	M-138	2.35

Form 15 is furnished in Red only (For machining steel) see page 59.



60° FORM 15		SQUARE SHANK THREADING CUTTERS						60° FORM 15	
No.	PRICE Each Cutter	SHANK SIZE			TIP SIZE			No.	PRICE Each Cutter
		Height	Width	Length	Thickness	Width	Length		
M-151	\$1.10	1/4	1/4	1 3/4	1/16	1/4	5/16	M-151	\$1.10
M-152	1.20	5/16	5/16	2 1/4	3/32	5/16	3/8	M-152	1.20
M-153	1.30	3/8	3/8	2 1/2	3/32	3/8	1/2	M-153	1.30
M-154	1.60	7/16	7/16	3	3/32	7/16	1/2	M-154	1.60
M-155	1.60	1/2	1/2	3 1/2	1/8	1/2	9/16	M-155	1.60
M-157	2.25	5/8	5/8	4	5/32	5/8	5/8	M-157	2.25
M-158	3.10	3/4	3/4	4 1/2	3/16	3/4	3/4	M-158	3.10

PROPER CARE FOR ARMIDE CUTTERS:

- Free hand grinding is preferable—use only wheels recommended.
- Dry grinding is best—don't overheat tip.
- Grind toward cutting edge—not away from it—dress wheel frequently.
- Keep cutting edge sharp—using honing machine frequently.
- Machinery must be rigid and free from vibration.
- Run at speed from which the maximum run per grind may be obtained. Generally, Armide should be run at two to three times faster speed than that applied on the same job for high speed tools. Be sure that speed is supported by sufficient power.
- Support tools as near cutting edge as possible—use minimum overhang.
- Don't stop work with tool in the cut.
- Coolants and cutting lubricants are optional.
- Operate tools with a minimum clearance.
- Angles given below have been found suitable for general use.

	Front Clearance	Side Clearance	Side Rake
Hard Steels.....	4°	4°	12°
Soft Steels.....	6°	6°	14°
Chilled Cast Iron.....	3°	3°	0 to 3°
Cast Iron.....	4°	4°	0 to 12°
Bronze, Brass, Alumi- num, etc.....	..	6°	12 to 16°
Compositions; Bakelites, etc.....	..	4 to 6°	8 to 12°

Armide should be held parallel to the Tool Holder Shank. Use ARMSTRONG Carbide Tool Holders ONLY—Specially designed for these cutters.

See page 10 for Carbide Tool Holders especially designed for use with ARMIDE Cutters.



ARMSTRONG ARMIDE TOOL SETS

ARMSTRONG ARMIDE Tool Sets permit the advantages of carbide cutting tools for many operations without the excessive cost of special tools.



Each set consists of one straight shank, one right-hand offset and one left-hand offset ARMSTRONG Carbide Tool Holder; and eight ARMIDE Cutters—one each right-hand, left-hand, square nose and 80 degree ARMIDE (red) for cutting steel, and one each right-hand, left-hand, square nose and 80 degree ARMIDE (gray) for cutting all other materials. The cutter forms included in these sets are forms 4, 7, 1 and 12. Each set is furnished complete with one wrench and steel case.

No.	Tool Holder Shank Size	Square Cutter Shank Size	LIST PRICE Set Complete	No.
M-0A	3/8 x 15/16 x 6	1/4 x 1/4	\$25.60	M-0A
M-1A	1/2 x 1 1/4 x 7	5/16 x 5/16	27.10	M-1A
M-2A	5/8 x 1 1/2 x 8	3/8 x 3/8	31.95	M-2A
M-3A	3/4 x 1 3/4 x 9	7/16 x 7/16	47.60	M-3A
M-4A	7/8 x 1 7/8 x 10	1/2 x 1/2	52.10	M-4A

See page 10 for Carbide Tool Holders, especially designed for use with ARMIDE cutters.



ARMSTRONG



SPECIAL SELF-HARDENING TOOL HOLDER STEEL

In Three-Foot Bars
Ready to Use—No Treatment Required



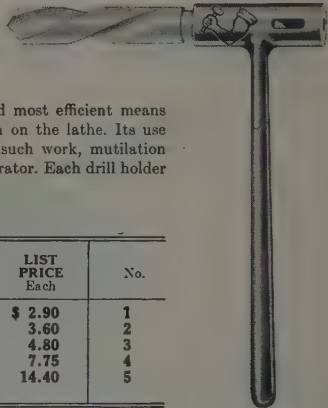
ARMSTRONG Special Self-Hardening Tool Holder Steel is furnished in three foot bars, ready for use. No special treatment is necessary. These bars are convenient for those who prefer to buy their steel in lengths to cut for their own individual requirements. Bits cut from these bars need grinding only to make them ready for use in ARMSTRONG Tool Holders.

When ordering please specify catalog number.

	No.	Size	LIST PRICE Per 3 Ft. Bar	No.	Size	LIST PRICE Per 3 Ft. Bar
SQUARES  For use in ARMSTRONG Turning and Boring Tools.	2481	1/4	\$2.00	2490	5/8	\$11.10
	2482	5/16	3.00	2486	3/4	15.80
	2483	3/8	4.25	2487	7/8	21.30
	2484	7/16	5.60	2488	1	28.20
	2485	1/2	7.10	2489	1 1/8	34.35
FLATS  For use in ARMSTRONG Planer and Slotter Tools.	2501	1/4 x 3/8	\$ 3.10	2505	5/8 x 7/8	\$15.60
	2502	5/16 x 7/16	4.25	2506	3/4 x 1	20.65
	2503	3/8 x 1/2	5.85	2507	7/8 x 1 1/8	27.30
	2504	1/2 x 3/4	11.00			



ARMSTRONG SAFETY DRILL HOLDER



This holder furnishes the simplest, safest and most efficient means for holding taper shank drills when using them on the lathe. Its use will eliminate 90 per cent of drill breakage in such work, mutilation of drill shanks and sockets and injury to the operator. Each drill holder is boxed separately.

No.	Size Shank Morse Taper	Holds Drills	LIST PRICE Each	No.
1	No. 1	1/16 to 9/16	\$ 2.90	1
2	No. 2	37/64 to 29/32	3.60	2
3	No. 3	59/64 to 1 1/4	4.80	3
4	No. 4	1 17/64 to 2	7.75	4
5	No. 5	2 1/64 to 3	14.40	5

ARMSTRONG "U" CLAMP DRILL HOLDER

This tool is designed for use in holding straight shank drills, reamers or similar tools, with safety to the operator and without danger of injury to the tool held.



Each drill holder is boxed separately.

No.	Capacity	Length	LIST PRICE Each	No.
200	3/8 to 1	11	\$4.30	200
300	5/8 to 1 1/2	13	5.75	300
400	7/8 to 2	15 1/2	9.35	400
500	1 1/4 to 3	18	12.85	500



ARMSTRONG

"ALL STEEL" LATHE TOOL CABINETS



Especially adapted for ARMSTRONG Lathe Tool Sets, this handsome cabinet adds to the systematic and orderly appearance of the shop and saves much time that is ordinarily wasted hunting for mislaid tools. Each man's tools, chuck, waste, and other equipment is within easy reach at all times.

The ARMSTRONG Lathe Tool Cabinet is of "all steel" construction. This cabinet is of modern design and attractively finished in gray enamel. It has three well proportioned drawers equipped with locks, keys and handles. A built-in tool holder rack is provided, as illustrated.

No.	Dimensions	Suitable for Lathe Tool Sets	LIST PRICE Each	No.
2	24 x 18 x 37	{ Nos. 0 and 1 Nos. 2 and 3 Nos. 4 and 5 }	\$100.00	2



ARMSTRONG GRINDING HOLDERS

ARMSTRONG Grinding Holders are convenient and inexpensive.

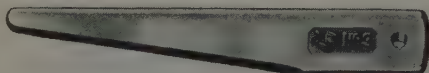
Tool Holders are frequently ruined by workmen holding cutters in them while grinding or sharpening and this wasteful practice can be corrected by the use of these grinding holders.



No.	HOLDS CUTTERS	LIST PRICE Each	No.
1-G	3/16 and 1/4 inch square	\$1.45	1-G
2-G	5/16 and 3/8 inch square	1.90	2-G
3-G	7/16 and 1/2 inch square	2.40	3-G
4-G	5/8 and 3/4 inch square	3.60	4-G

ARMSTRONG PLAIN DRILL DRIFTS

ARMSTRONG Plain Drill Drifts are drop forged from selected steel, finished and hardened.



No.	Length	Fitting	LIST PRICE Each	No.
1	5	No. 1 sockets and sleeves	\$0.55	1
2	6	No. 2 sockets and sleeves	.65	2
3	7	No. 3 sockets and sleeves	.75	3
4	8 1/2	No. 4, 5 & 6 sockets and sleeves	.95	4

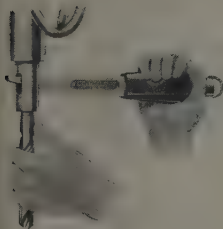


ARMSTRONG SAFETY DRILL DRIFT

Automatic—Convenient—Effective



Serious injury to workmen is liable to result from the use of the common drift and hammer through heavy chucks, drills, etc., falling on the operators' feet and the tools themselves are often damaged by rough contact with the floor or machine table; having both hands occupied with drift and hammer the workman is helpless and must take chances.



The ARMSTRONG Safety Drift combines hammer and drift thus leaving one hand free to support the tool to be removed: see illustration.

The heavy handle or driver is slidably mounted upon the blade, which is automatically kept extended, when not in operation, by a low tension coil spring.

In operating, the point of the blade is inserted in the slot of drill socket and the handle driven forcibly up the blade, until it strikes the butt end of drift—it will strike a blow sufficiently heavy to remove the most stubborn drill. One of these drifts attached to each drill press will soon save enough time to repay its cost many times.

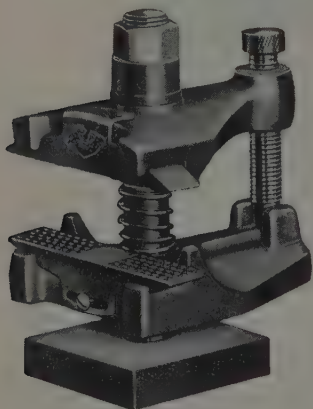
Each drill drift is boxed separately.

No.	Capacity Morse Taper	Recommended for	LIST PRICE Extra Blades Each	LIST PRICE Each Complete	No.
1-A	No. 1, 2 or 3	No. 1 or 2	\$1.90	\$4.80	1-A
2-A	No. 2, 3 or 4	No. 2 or 3	2.40	6.00	2-A
3-A	No. 3, 4 or 5	No. 3 or 4	3.35	8.40	3-A
4-A	No. 4, 5 or 6	No. 4 or 5	4.30	10.80	4-A



ARMSTRONG IMPROVED LATHE TOOL POST

The ARMSTRONG Improved Lathe Tool Post combines the strength and holding power of the strap and stud tool clamp with the convenience of the "open side" and ordinary set screw tool post.



Points of Superiority

It is stronger and stiffer than the ordinary tool post; will not slip or chatter and consequently will do more accurate work.

As there is no side projection it is peculiarly adapted to working close up to the chuck.

It has a great range of adjustment without loss of holding power as the rocker jaws adjust themselves on parallel lines.

The open side design permits rapid and convenient change and adjustment of tools.

It will not cut or tear the tool shank, and is therefore peculiarly adapted to use in connection with tool holders. The body parts and jaws are drop forged of steel-hardened, and other parts are bar steel.

Each tool post is boxed separately and price includes wrench.

No.	For Tools Size	For Lathes	LIST PRICE Each	No.
1-T	1/2 x 1 1/8 Inch and Less	12 to 14 In. Swing	\$13.20	1-T
2-T	5/8 x 1 3/8 and 3/4 x 1 5/8	16 to 18 In. Swing	16.80	2-T
3-T	3/4 x 1 5/8 and 7/8 x 1 3/4	20 to 22 In. Swing	21.60	3-T
4-T	7/8 x 1 3/4 and 1 x 2	24 to 32 In. Swing	25.60	4-T

Note—Bolt head and base forging are made large enough to allow for fitting. This is made necessary by the variation in size of T slots and center heights in lathes of different manufacture.

Fitting—An extra charge of \$2.50 net for Nos. 1-T and 2-T and \$4.50 net for Nos. 3-T and 4-T will be made for fitting tool post to individual lathe dimensions.



ARMSTRONG TOOL POST FITTINGS



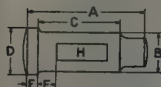
Tool Post



Wedge



Ring



TOOL POSTS

Openings Punched Out

No.	LIST PRICE Each	Length A	Body		Base		Base to Opening, F	Opening Size, H	For use with Wedge	For use with Ring
			Dia. B	Lgth. C	Dia. D	Lgth. E				
5	\$0.82	2 15/16	1 1/32	2	1 7/32	5/16	7/16	1 5/16 x 7/16	5	5
10	1.05	4 1/16	1 1/4	2 7/8	1 5/8	1/4	1/2	1 15/16 x 19/32	10	10
20	1.40	4 9/16	1 5/8	3 1/4	2 1/8	7/16	13/16	1 7/8 x 11/16	15 & 18	11
23	1.65	5	1 7/16	3 1/2	1 7/8	5/16	5/8	2 1/2 x 21/32	15	14
28	1.90	5 3/16	1 9/16	3 11/16	2 1/16	5/16	5/8	2 11/16 x 11/16	15 & 18	18
30	2.10	5 1/4	1 13/16	3 3/4	2 5/16	1/2	15/16	2 1/8 x 3/4	18 & 20	20
40	3.05	6 5/16	2 1/16	4 3/8	2 5/8	9/16	1 3/16	2 1/2 x 7/8	30 & 40	30 & 40
50	3.95	7 3/8	2 1/4	5	2 15/16	5/8	1 3/8	2 7/8 x 15/16	60	60
60	7.95	8 3/4	2 31/32	6	3 5/8	3/4	1 1/2	3 9/16 x 1		

TOOL POST WEDGES

For Changing Angles of Lathe Tools

No.	LIST PRICE Each	Length	Width Top	Width Extreme	Extreme Thickness	Radius	For Use with Post	For Use with Ring
5	\$0.27	2 13/32	13/32	1/2	11/32	3	5	5
10	.30	3	9/16	21/32	31/64	2 7/8	10	10
11	.30	3 3/8	1/2	19/32	25/64	4 5/8	20	11
15	.33	3 3/8	5/8	23/32	7/16	4 5/8	20	11
18	.34	3 7/8	11/16	3/4	15/32	4 1/2	30	11 & 20
20	.35	3 7/8	11/16	13/16	17/32	4 3/4	30	20
30	.40	4 3/8	3/4	7/8	1/2	5 1/2	40	30
40	.47	4 7/8	13/16	15/16	21/32	5 3/4	40	40
60	.56	5 1/4	15/16	1 3/32	3/4	6	50	60
65	.61	5 5/16	7/8	1 1/32	29/32	5		

TOOL POST RINGS

For Changing Angles of Lathe Tools

No.	LIST PRICE Each	Dia. Outside	Dia. Hole	Thickness Edge	Radius of Concave	For Use with Post	For Use with Wedge
5	\$0.33	2 1/4	1 1/16	3/8	3	5	5
10	.47	2 15/16	1 5/16	7/16	2 7/8	10	10
11	.52	3	1 5/8	7/16	4 5/8	20	11 & 15
14	.75	3 3/16	1 7/16	5/8	4 5/8	23	18 & 20
18	.94	3 7/16	1 9/16	11/16	4 1/2	28	18
20	.82	3 1/2	1 3/4	9/16	4 3/4	30	18 & 20
30	1.00	3 1/2	2	3/4	5 1/2	40	30
40	1.15	4	2	3/4	5 3/4	40	40
60	1.50	4 1/2	2 3/16	3/4	6	50	60



ARMSTRONG EYE BOLTS DROP FORGED STEEL



PLAIN PATTERN
Blank or Threaded



ARMSTRONG Eye Bolts are of strong, uniform design, drop forged from the best mild steel and are treated to give increased tensile strength.

All ARMSTRONG Eye Bolts are proof tested to fifty per cent beyond the "Safe Working Load" to assure proper service at listed capacity.

American National Coarse (U. S. Std.) Threaded Eye Bolts of standard length are in stock; threaded prices are for these with either American National Coarse (U. S. Std.) or Whitworth Standard (B.S.W.) Threads; longer lengths and special threads extra.

When ordering, please state whether Blank or Threaded are desired; Threaded will be supplied, unless otherwise specified.

No.	Shank			Diameter Eye		LIST PRICE, Each					No.
	Diam.; Nominal Rough Size; Blank	Std. Length under Eye. Blank and Thd.	Max- imum Length in Stock; Blank	Inside	Outside	Blank			Threaded		
						Stand- ard Lgth.	Extra for Lgth. up to Max.	Extra per *Inch over Max.	Stand- ard Lgth.	Extra per *Inch for Thd. only	
3	3/8	1 1/4	4 1/2	1	2 1/32	\$0.18	\$0.18	\$0.10	\$0.26	\$0.08	3
4	7/16	1 3/8	4 1/2	1	3/32	.19	.19	.10	.29	.08	4
5	1/2	1 1/2	4 1/2	1	3/16	.22	.22	.10	.34	.08	5
6	9/16	1 5/8	4 1/2	1	9/32	.27	.27	.13	.40	.08	6
7	5/8	1 3/4	4 1/2	1	3/8	.35	.35	.16	.51	.10	7
8	3/4	2	5	1	1/2	.48	.38	.19	.67	.10	8
9	7/8	2 1/4	5	1	11/16	.64	.42	.22	.88	.10	9
10	1	2 1/2	5	1	13/16	.88	.48	.27	1.18	.11	10
11	1 1/8	2 3/4	5	2	4	1.28	.56	.32	1.66	.13	11
12	1 1/4	3	6	2	3/16	1.84	.80	.37	2.32	.16	12
14	1 1/2	3 1/2	6	2	1/2	3.20	1.04	.53	4.00	.22	14
15	1 3/4	3 3/4	6	2	7/8	4.80	1.28	.77	6.00	.32	15
16	2	4	6	3	1/4	6.80	1.60	1.04	8.48	.43	16
17	2 1/2	5	6	4	8 9/16	11.20	1.20	1.60	14.08	.58	17

*Extra per inch, or fraction thereof.

Safe Working Load for EYE BOLTS in Tons of 2000 lbs.

Number	21	22	23	24	25	26	27	28	29	30	31	32	34	35	36	17
Safe Load	.2	.4	.7	1.0	1.3	1.5	2.0	3.0	3.5	4.0	5.0	7.5	9.0	11.0	13.0	16.0
Approximate Breaking Strain	1.5	2.0	3.0	4.0	5.0	6.0	8.0	12.0	16.0	20.0	23.0	33.0	42.0	53.0	68.0	85.0

(continued on page 71)



ARMSTRONG EYE BOLTS

DROP FORGED STEEL

(continued from page 70)



SHOULDER PATTERN

Blank or Threaded



On standard length Threaded Eye Bolts of Shoulder Pattern the thread runs within 1/8 to 3/8 inch of shoulder, which is faced.

Prices for either Plain, or Shoulder Eye Bolts of "Extra Length" apply only to forgings which may be in stock at time ordered.

Threaded Eye Bolts will be supplied unless Blank is specified.

No.	Shank			Eye, Diameter		LIST PRICE, Each					No.
	Diam.; Nom- inal Rough Size; Blank	Std. Length under Shldr. Blank and Thd.	Max- imum Length in Stock; Blank	Inside	Outside	Blank			Threaded		
						Stand- ard Lgth.	Extra for Lgth. up to Max.	Extra per *Inch over Max.	Stand- ard Lgth.	Extra per *Inch for Thd. only	
21	1/4	1	3	3/4	1 3/16	\$0.14	\$0.14	\$0.10	\$0.22	\$0.08	21
22	5/16	1 1/8	4	7/8	1 7/16	.16	.16	.10	.24	.08	22
23	3/8	1 1/4	4 1/2	1	1 21/32	.18	.18	.10	.26	.08	23
24	7/16	1 3/8	4 1/2	1 3/32	1 27/32	.19	.19	.10	.29	.08	24
25	1/2	1 1/2	4 1/2	1 3/16	2 1/16	.22	.22	.10	.34	.08	25
26	9/16	1 5/8	4 1/2	1 9/32	2 9/32	.27	.27	.13	.40	.08	26
27	5/8	1 3/4	4 1/2	1 3/8	2 1/2	.35	.35	.16	.51	.10	27
28	3/4	2	5	1 1/2	2 13/16	.48	.38	.19	.67	.10	28
29	7/8	2 1/4	5	1 11/16	3 1/4	.64	.42	.22	.88	.10	29
30	1	2 1/2	5	1 13/16	3 9/16	.88	.48	.27	1.18	.11	30
31	1 1/8	2 3/4	5	2	4	1.28	.56	.32	1.66	.13	31
32	1 1/4	3	6	2 3/16	4 7/16	1.84	.80	.37	2.32	.16	32
34	1 1/2	3 1/2	6	2 1/2	5 3/16	3.20	1.04	.53	4.00	.22	34
35	1 3/4	3 3/4	6	2 7/8	6 1/16	4.80	1.28	.77	6.00	.32	35
36	2	4	6	3 1/4	6 7/8	6.80	1.60	1.04	8.48	.43	36

*Extra per inch, or fraction thereof. For THREADED Eye Bolts in quantities less than 100 of same pattern and shank diameter shorter or longer than standard an extra net charge will be made for Setting-Up.

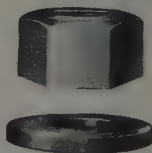
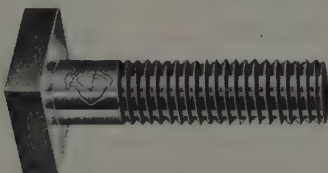
For Safe Working Load for EYE BOLTS in Tons of 2000 lbs. see page 70.



ARMSTRONG "T" SLOT BOLTS

ARMSTRONG Standard machine Table "T" Slot Bolts are forged from selected steel accurately machined and heat treated to give increased tensile strength. They are furnished with American National Coarse (U.S. Std.) Threads less nut and washer unless otherwise specified.

For best results use ARMSTRONG nuts and washers which are designed especially for use on ARMSTRONG "T" Slot Bolts.



When ordering, please specify catalog number.

"T" Slot Bolts in lengths up to and including 6" are packed 25 to a box.

No.	Bolt Diameter	Dimension of Head	Bolt Length	Thread Length	LIST PRICE Each	No.
7990	3/8	5/8 x 3/16	1 1/2	1 1/4	\$0.30	7990
7991	3/8	5/8 x 3/16	2	1 3/4	.30	7991
7993	3/8	5/8 x 3/16	3	2	.33	7993
7995	3/8	5/8 x 3/16	4	2	.38	7995
7997	3/8	5/8 x 3/16	5	2 1/4	.42	7997
7999	3/8	5/8 x 3/16	6	2 1/4	.50	7999
8000	3/8	5/8 x 3/16	8	2 1/4	.70	8000
8282	1/2	7/8 x 1/4	2	1 1/4	.30	8282
8284	1/2	7/8 x 1/4	3	1 1/4	.35	8284
8286	1/2	7/8 x 1/4	4	1 1/2	.40	8286
8288	1/2	7/8 x 1/4	5	1 3/4	.47	8288
8290	1/2	7/8 x 1/4	6	2	.55	8290
8291	1/2	7/8 x 1/4	8	2 1/4	.95	8291
8292	1/2	7/8 x 1/4	10	2 1/2	1.25	8292
8293	1/2	7/8 x 1/4	12	2 1/2	1.75	8293

(Continued on page 73)



ARMSTRONG "T" SLOT BOLTS

(Continued from page 72)

No.	Bolt Diameter	Dimension of Head	Bolt Length	Thread Length	LIST PRICE Each	No.
8302	5/8	1 1/16 x 5/16	2	1 1/4	\$0.35	8302
8304	5/8	1 1/16 x 5/16	3	1 1/2	.45	8304
8306	5/8	1 1/16 x 5/16	4	1 3/4	.60	8306
8308	5/8	1 1/16 x 5/16	5	2	.70	8308
8310	5/8	1 1/16 x 5/16	6	2 1/4	.80	8310
8311	5/8	1 1/16 x 5/16	8	2 1/4	1.25	8311
8312	5/8	1 1/16 x 5/16	10	2 1/2	1.70	8312
8313	5/8	1 1/16 x 5/16	12	2 1/2	2.15	8313
8322	3/4	1 3/16 x 7/16	2	1 1/2	.65	8322
8324	3/4	1 3/16 x 7/16	3	1 1/2	.75	8324
8326	3/4	1 3/16 x 7/16	4	1 3/4	.85	8326
8328	3/4	1 3/16 x 7/16	5	2	.95	8328
8330	3/4	1 3/16 x 7/16	6	2	1.05	8330
8331	3/4	1 3/16 x 7/16	8	2 1/4	1.80	8331
8332	3/4	1 3/16 x 7/16	10	2 1/2	2.55	8332
8333	3/4	1 3/16 x 7/16	12	2 1/2	3.30	8333

NUTS

ARMSTRONG Nuts for "T" Slot Bolts are made from a special steel and are heat treated. Furnished only with American National Coarse (U. S. Std.) Threads.

These nuts are furnished in standard packages of 100 to a box.

No.	Bolt Diameter	Outside Diameter	Thickness	LIST PRICE Each	No.
N-19	3/8	11/16	1/2	\$0.10	N-19
N-20	1/2	7/8	5/8	.13	N-20
N-21	5/8	1 1/16	3/4	.20	N-21
N-22	3/4	1 1/4	7/8	.26	N-22

WASHERS

ARMSTRONG Washers for "T" Slot Bolts are heavy, extra thick washers, made from cold rolled bar stock. Case hardened. Hole diameter is 1/32 over bolt size.

These washers are furnished in standard packages of 100 to a box.

No.	Bolt Diameter	Outside Diameter	Thickness	LIST PRICE Each	No.
W-9	3/8	7/8	3/16	\$0.07	W-9
W-10	1/2	1	3/16	.08	W-10
W-11	5/8	1 1/4	1/4	.10	W-11
W-12	3/4	1 1/2	1/4	.12	W-12

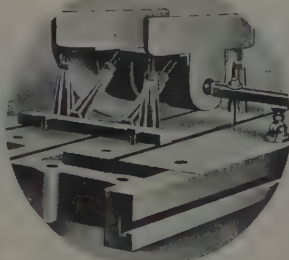


ARMSTRONG NON-SKID JACKS

Cut Clamping Costs

This jack combines ease of operation and great power with an absolutely straight thrust as neither base nor screw revolve; the nut is the only part which turns. This design prevents "creeping" and permits setting the jack under a fillet or sloping surface without danger of side slipping.

**VERTICAL
JACK**



**BRACING
JACK**



"JUST TURN THE NUT"

VERTICAL JACKS

No.	Height Contracted	Height Extended	Diameter Screw	LIST PRICE Each	No.
351	2 3/4	4	5/8	\$2.10	351
352	4	7 1/4	5/8	3.20	352
353	6 3/4	12	3/4	4.80	353
354	8 3/4	15	1	7.20	354

BRACING JACKS

No.	Height Contracted	Height Extended	Diameter Screw	LIST PRICE Each	No.
361	3 3/4	6	5/8	\$1.90	361
362	4 3/4	8	5/8	2.95	362
363	6 3/4	12	3/4	4.40	363
364	8 3/4	16	3/4	6.00	364



ARMSTRONG PLANER JACKS

For Leveling Work On Machine Tools



ARMSTRONG Planer Jacks are designed to displace the haphazard devices and methods quite generally in use for leveling work on machine tools, and a glance will show any mechanic their convenience and utility. A set of them on a machine will greatly reduce the proportion of time required for preliminary arrangements as compared with the actual machine time on the job, and will, moreover, by their perfect adjustability and solidity, insure good, true surfaced work.

Each ARMSTRONG Planer Jack is boxed separately.

No.	Height Contracted	Height Extended	LIST PRICE Each	No.
1	2 3/4	3 3 4	\$3.05	1
2	3 3/4	5 1 4	4.80	2
3	5 1/4	7 1 2	7.20	3
4	7 1/2	12	13.85	4

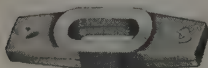


ARMSTRONG MACHINE STRAP CLAMPS

Drop Forged Steel

For holding down work, dies and fixtures on planers, punch presses, milling machines, boring mills and drill presses.

ARMSTRONG Machine Strap Clamps are drop forged from a carefully selected steel and are uniformly heat treated to increase their strength and stiffness.



PLAIN CLAMP

No.	Length	Width	Thickness	Size of Slot		LIST PRICE Each	No.
				Width	Length		
54	4	1 5/8	3/4	11/16	1 3/8	\$0.60	54
56	6	1 3/4	7/8	11/16	2 1/16	1.00	56
58	8	2 1/8	1 1/8	13/16	2 13/16	1.70	58
59	10	2 1/2	1 3/8	15/16	3 11/16	2.80	59



SCREW HEEL CLAMP

No.	Length	Width	Thickness	Size of Slot		LIST PRICE Each	No.
				Width	Length		
54-A	4	1 5/8	3/4	11/16	1 3/8	\$1.10	54-A
56-A	6	1 3/4	7/8	11/16	2 1/16	1.70	56-A
58-A	8	2 1/8	1 1/8	13/16	2 13/16	2.60	58-A
59-A	10	2 1/2	1 3/8	15/16	3 11/16	4.00	59-A



GOOSE NECK CLAMP

No.	Length	Width	Thickness	Size of Slot		Offset Inches	LIST PRICE Each	No.
				Width	Length			
74	4	1 3/8	3/4	11/16	15/16	13/16	\$0.60	74
76	6	1 3/4	7/8	11/16	1 11/16	15/16	1.00	76
78	8	2 1/8	1 1/8	13/16	2 7/16	1 1/8	1.70	78

(Continued on page 77)



ARMSTRONG MACHINE STRAP CLAMPS

Drop Forged Steel

(Continued from page 76)

ARMSTRONG Machine Strap Clamps cut down considerably the loss of time for machines and by operators. They are always available for holding down work safely and securely.

DOUBLE FINGER CLAMP



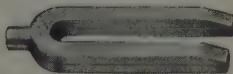
No.	Length	Width	Thickness	Diam. Hole Inches	Size of Fingers		LIST PRICE Each	No.
					Diam.	Length		
30	3	1 1/2	5/8	11/16	1/2	1/2	\$0.40	30
35	3 1/2	1 5/8	3/4	11/16	5/8	5/8	.50	35
40	4	1 13/16	7/8	13/16	3/4	3/4	.70	40

FINGER CLAMP



No.	Length	Width	Thickness	Size of Slot		Size of Finger		LIST PRICE Each	No.
				Width	Length	Diam.	Length		
44	4	1 3/8	3/4	11/16	1 3/8	1/2	1/2	\$0.60	44
46	6	1 3/4	7/8	11/16	1 15/16	5/8	5/8	1.00	46
48	8	2 1/8	1 1/8	13/16	2 9/16	3/4	3/4	1.70	48

"U" CLAMP



No.	Length	Width	Thickness	Size of Slot		Size of Finger		LIST PRICE Each	No.
				Width	Length	Diam.	Length		
64	4	1 3/4	3/4	11/16	3 1/2	9/16	9/16	\$0.60	64
66	6	2	7/8	11/16	5 1/2	11/16	11/16	1.00	66
68	8	2 3/8	1 1/8	13/16	7 3/8	13/16	13/16	1.70	68
110	10	2 3/4	1 1/4	15/16	9	15/16	15/16	2.50	110
112	12	3 1/4	1 3/8	1 1/16	11	1 1/16	1 1/16	3.70	112



ARMSTRONG QUICK ACTION DRILL VISE

An extremely handy vise for tool makers and general machine shop use.



POINTS OF ADVANTAGE

One turn of handle sets or releases the vise.

It can be instantly adjusted to any size within its capacity.

The sides are ground true and at right angles with the bottom.

It will hold work true and solid, as the sliding jaw draws down.

The handle provides a safe and convenient means of holding light work with ample leverage against the tendency to twist under strain of cut, and bottom of vise has projecting lugs at either end to facilitate clamping it to the machine when desirable.

Each vise is boxed separately.

No.	CAPACITY			Dimensions of Lugs		Length Overall	LIST PRICE Each	No.
	Width of Jaw	Depth of Jaw	Opens	Height	Width			
1-V	2	15/16	1 3/4	5/16	1/4	6	\$20.25	1-V
2-V	2 3/4	1 3/16	2 1/2	7/16	3/8	7 3/4	27.00	2-V
3-V	3 1/2	1 7/16	3	9/16	7/16	9 3/8	36.00	3-V



ARMSTRONG MILLING MACHINE DOGS

Drop Forged Steel



These dogs are recommended for use on taper work carried between centers on milling machines.

The flat tail engages the head-slot without the back-lash produced by taper tail dogs.

The hubs are large enough to permit re-tapping. The screws are made from alloy steel with American National Coarse (U. S. Std.) thread and are hardened on the point, the improved shape of which also renders them less liable to flange or upset.

Number	Capacity	LIST PRICE Extra Screws Each	LIST PRICE Each Complete	Number
42	1/2	\$0.31	\$1.55	42
43	3/4	.34	1.70	43
44	1	.40	2.00	44
45	1 1/4	.42	2.40	45
46	1 1/2	.54	2.85	46
47	1 3/4	.62	3.40	47
48	2	.74	3.95	48



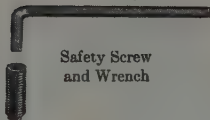
ARMSTRONG STRAIGHT TAIL LATHE DOGS

With Either Square Head or Safety Screws

Drop Forged Steel



With Square Head Screw



Safety Screw
and Wrench



With Safety Screw

ARMSTRONG Lathe Dogs are drop forged from selected steel to give exceptional toughness and stiffness which are essential in a good lathe dog. The hubs are large enough to permit retapping. The screws are made from fine alloy steel with American National Coarse (U. S. Std.) thread and are hardened on the point.

Dogs with square head screws will be shipped when not otherwise specified.

Number		Capacity	LIST PRICE Each Wrench for Safety Screw Extra	LIST PRICE Extra Screws Each		LIST PRICE Each Complete*	Number	
With Square Head Screw	With Safety Screw			Square Head	Safety		With Square Head Screw	With Safety Screw
21	21-H	3/8	\$0.12	\$0.20	\$0.20	\$ 1.00	21	21-H
22	22-H	1/2	.14	.22	.24	1.10	22	22-H
23	23-H	3/4	.16	.24	.30	1.20	23	23-H
24	24-H	1	.18	.28	.36	1.40	24	24-H
25	25-H	1 1/4	.18	.30	.42	1.70	25	25-H
26	26-H	1 1/2	.18	.38	.50	2.00	26	26-H
27	27-H	1 3/4	.26	.44	.60	2.40	27	27-H
28	28-H	2	.26	.52	.72	2.80	28	28-H
29	29-H	2 1/2	.38	.66	.86	3.60	29	29-H
30	30-H	3	.38	.72	.86	4.60	30	30-H
31	31-H	3 1/2	.60	1.00	1.16	6.00	31	31-H
32	32-H	4	.60	1.10	1.16	9.00	32	32-H
33	33-H	5	.90	1.50	1.50	16.00	33	33-H

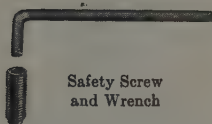
*Price does not include wrench. When ordering dogs with safety screws specify whether wrenches are wanted or not and if wanted how many.



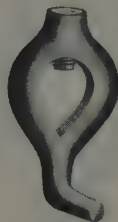
ARMSTRONG BENT TAIL LATHE DOGS

With Either Square Head or Safety Screws

Drop Forged Steel



Safety Screw
and Wrench



With Square Head Screw

With Safety Screw

ARMSTRONG Lathe Dogs are drop forged from selected steel to give exceptional toughness and stiffness which are essential in good lathe dogs. The hubs are large enough to permit retapping. The screws are made from fine alloy steel with American National Coarse (U. S. Std.) thread and are hardened on the point.

Dogs with square head screws will be shipped when not otherwise specified.

Number		Capacity	LIST PRICE Each Wrench for Safety Screw Extra	LIST PRICE Extra Screws Each		LIST PRICE Each Complete*	Number	
With Square Head Screw	With Safety Screw			Square Head	Safety		With Square Head Screw	With Safety Screw
1	1-H	3/8	\$0.12	\$0.20	\$0.20	\$1.00	1	1-H
2	2-H	1/2	.14	.22	.24	1.10	2	2-H
3	3-H	3/4	.16	.24	.30	1.20	3	3-H
4	4-H	1	.18	.28	.36	1.40	4	4-H
5	5-H	1 1/4	.18	.30	.42	1.70	5	5-H
6	6-H	1 1/2	.18	.38	.50	2.00	6	6-H
7	7-H	1 3/4	.26	.44	.60	2.40	7	7-H
8	8-H	2	.26	.52	.72	2.80	8	8-H
9	9-H	2 1/2	.38	.66	.86	3.60	9	9-H
10	10-H	3	.38	.72	.86	4.60	10	10-H
11	11-H	3 1/2	.60	1.00	1.16	6.00	11	11-H
12	12-H	4	.60	1.10	1.16	9.00	12	12-H
13	13-H	5	.90	1.50	1.50	16.00	13	13-H

*Price does not include wrench. When ordering dogs with safety screws specify whether wrenches are wanted or not and if wanted how many.



ARMSTRONG HEAVY DUTY LATHE DOGS

With Either Square Head or Safety Screws

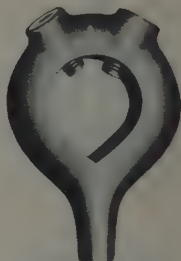
Drop Forged Steel



Straight
Tail
Double
Screw



Safety Screw
and Wrench



With Square Head Screws

With Safety Screws

ARMSTRONG Lathe Dogs are drop forged from a steel selected for its high degree of stiffness, combined with great tensile strength, which qualities are further improved by careful treatment.

The screws are made from selected grade alloy steel, with American National Coarse (U. S. Std.) points.

Dogs with square head screws will be shipped when not otherwise specified.

Number		Capacity	LIST PRICE Each Wrench for Safety Screw Extra	LIST PRICE Each Extra Screws		LIST PRICE Each Complete*	Number	
With Square Head Screws	With Safety Screws			Square Head	Safety		With Square Head Screws	With Safety Screws
132	132-H	4	\$0.60	\$1.10	\$1.16	\$16.00	132	132-H
133	133-H	5	.90	1.50	1.50	24.00	133	133-H
134	134-H	6	.90	1.60	1.50	34.00	134	134-H

* Price does not include wrench. When ordering dogs with safety screws specify whether wrenches are wanted or not and, if wanted, how many.



ARMSTRONG HEAVY DUTY LATHE DOGS

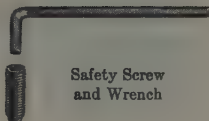
With Either Square Head or Safety Screws

Drop Forged Steel

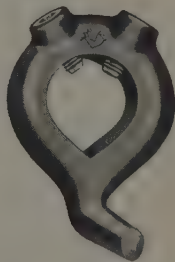


With Square Head Screws

Bent
Tail
Double
Screw



Safety Screw
and Wrench



With Safety Screws

ARMSTRONG Lathe Dogs are drop forged from selected steel to give the required stiffness and great tensile strength necessary in good lathe dogs.

The screws are made from selected grade alloy steel, with American National Coarse (U. S. Std.) thread; hardened points.

Dogs with square head screws will be shipped when not otherwise specified.

Number		Capacity	LIST PRICE Each Wrench for Safety Screw Extra	LIST PRICE Each Extra Screws		LIST PRICE Each Complete*	Number	
With Square Head Screws	With Safety Screws			Square Head	Safety		With Square Head Screws	With Safety Screws
112	112-H	4	\$0.60	\$1.10	\$1.16	\$16.00	112	112-H
113	113-H	5	.90	1.50	1.50	24.00	113	113-H
114	114-H	6	.90	1.60	1.50	34.00	114	114-H

*Price does not include wrench. When ordering dogs with safety screws specify whether wrenches are wanted or not and, if wanted, how many.



ARMSTRONG SAFETY CLAMP LATHE DOG

PRACTICAL — SAFE — WELL BALANCED



ARMSTRONG Safety Clamp Lathe Dogs are constructed to combine a wide range of adjustment with the convenient features of the clamp dog and the simplicity and strength of the ordinary lathe dog. They will accommodate themselves readily to work of any shape and will hold it securely and squarely, being especially adapted for use on finished work which would be liable to be damaged by the set screw of a common lathe dog. The sliding jaw is operated by a loose fitting U bolt, the ends of which are protected by safety sleeve nuts and can be adjusted to size very quickly, only a wrench being necessary to tighten. One advantage of this dog is that it can be applied without removing work from centers.

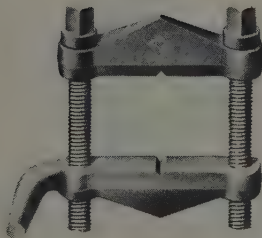
Each dog is boxed separately.

Number	Capacity	LIST PRICE Each	Number
1-U	1/8 to 5/8	\$ 2.40	1-U
2-U	3/8 to 1	3.00	2-U
3-U	5/8 to 1 1/2	4.00	3-U
4-U	7/8 to 2	5.50	4-U
5-U	1 1/4 to 3	8.00	5-U
6-U	1 3/4 to 4	12.00	6-U
7-U	2 1/2 to 5	16.00	7-U



ARMSTRONG CLAMP LATHE DOG

Drop Forged Steel



The under face of screw heads is convex, fitting into a concave seat, and as the holes in upper bar are larger than the screw, this allows for considerable tilting without bending the screws. The clamp bars are forged from a stiff, open hearth steel, carefully machined and hardened. Screws are hardened.

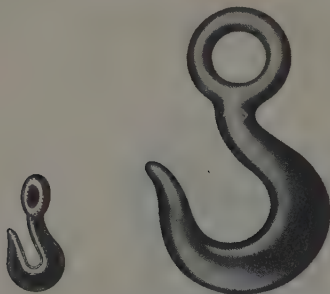
Each dog is boxed separately.

Number	Capacity Between Screws	LIST PRICE Extra Screws Each	LIST PRICE Each Complete	Number
11	1 3/4	\$0.20	\$3.00	11
12	2 1/4	.30	4.00	12
13	2 3/4	.40	5.00	13
14	3 1/2	.60	7.00	14



ARMSTRONG HOIST HOOKS

Drop Forged Selected Grade Steel



ARMSTRONG Drop Forged Hoist Hooks are furnished in a complete range of sizes from the smallest with a safe working load of half a ton to the largest with a safe working load of 25 tons. The maximum load is four times the safe working load and the elastic limit is approximately twice the working load.

All ARMSTRONG Hoist Hooks are drop forged from the best mild steel and are heat treated to give increased tensile strength.

The No. 27 hoist hook with eye at right angle as shown in small illustration above is recommended for safety chains on railroad cars and can be furnished to order in reasonable quantities.

No.	Dia. of Eye		Opening of Throat	Extreme Dimensions		Capacity—Net Tons			LIST PRICE Each	No.
	Inside	Outside		Length	Width	Safe Working Load	Aver. Load of Elastic Limit	* Approx. Load Required to Straighten Out		
22	3/4	1 1/2	1	4 3/8	2 7/8	.5	.9	1.9	\$0.36	22
23	7/8	1 3/4	1 1/16	4 7/8	3 1/8	.6	1.2	2.3	.43	23
24	1	2	1 1/8	5 3/8	3 1/2	.7	1.5	3.	.53	24
25	1 1/8	2 1/4	1 1/4	6 3/16	3 7/8	1.2	2.5	5.7	.73	25
26	1 1/4	2 1/2	1 3/8	6 7/8	4 3/8	1.7	3.5	7.	1.05	26
27	1 3/8	2 3/4	1 1/2	7 5/8	4 7/8	2.1	4.2	8.5	1.50	27
28	1 1/2	3	1 3/4	8 9/16	5 5/8	2.5	5.4	10.	2.10	28
29	1 5/8	3 1/4	1 7/8	9 9/16	6 3/8	3.	6.2	13.	2.85	29
30	1 3/4	3 1/2	2 1/16	10 3/8	6 7/8	4.	8.	17.	3.70	30
31	2	4	2 1/4	11 1/2	7 1/2	4.7	9.	19.	4.70	31
32	2 3/8	4 5/8	2 1/2	13	8 1/4	5.5	11.	26.	6.40	32
33	2 3/4	5 1/4	3	14 3/4	9 1/4	6.8	13.	32.	9.40	33
34	3 1/8	6 1/8	3 3/8	16 3/4	11	8.	17.	35.	18.50	34
35	3 1/2	7	4	19 1/8	13 1/2	11.	21.	48.	35.00	35
36	4	8 1/2	4 1/2	22 3/4	15	20.	40.	80.	86.00	36
*36A	4	8 1/2	4 1/2	22 3/4	15	25.	50.	....	100.00	*36A

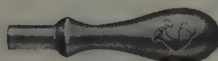
*36A Hook is made from special alloy steel; others from carbon steel.



ARMSTRONG MACHINE HANDLE FORGINGS

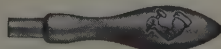
Unfinished
With Smooth, Planished Surface

BALL PATTERN



Number	00	0	1	2	3	4	5	6	7
Extreme Length.	2	2 1/4	2 3/4	3 1/4	3 7/8	4 1/2	5 1/8	5 7/8	6 5/8
Standard Length, Shank	1/2	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2
Maximum Length, Shank	11/16	3/4	1	1 1/8	1 1/4	1 1/2	1 7/8	2	2 1/8
Diameter, Shank	5/16	11/32	13/32	15/32	15/32	17/32	19/32	11/16	3/4
LIST PRICE Each.	\$0.21	\$0.21	\$0.23	\$0.29	\$0.36	\$0.46	\$0.57	\$0.69	\$0.84

CONE PATTERN

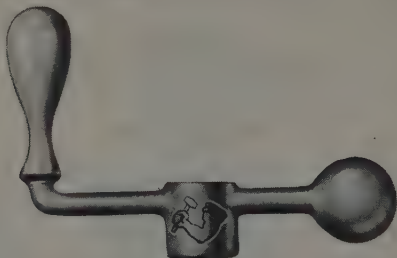


Number	11	13	15	16
Extreme Length.	3 1/2	4 1/2	5 1/2	6
Standard Length, Shank	1/2	3/4	7/8	1 1/8
Maximum Length, Shank	11/16	1 1/8	1 3/8	1 1/2
Diameter, Shank	3/8	7/16	1/2	9/16
LIST PRICE Each.	\$0.29	\$0.46	\$0.57	\$0.69



ARMSTRONG BALANCE HANDLES

Drop Forged Steel



Unfinished are plain forgings without any hole in hub.

Broached have holes finished, but are otherwise plain forgings.

Finished are broached, ground, polished, case-hardened all over and lacquered to prevent rusting.

The broached openings are made with corners slightly rounded to prevent breakage and a slight clearance is provided.

Holes are regularly finished to standard sizes given below but each forging admits of broaching to the maximum dimensions stated in table. Smaller openings than standard and special sizes can be broached to order. Handles can also be supplied with round holes in hub; details on application.

No.	Length			Hub		Square Hole, Size Broached		Ball, Diam.	LIST PRICE Each			No.
	C Hub to C Handle	Ex-treme	Handle Above Arm	Diam.	Length	Stand-ard in Stock	Maxi-mum to Order		Unfin-ished	Broach-ed	Fin-ished	
512	1 1/4	3 5/16	1 15/16	7/8	3/4	7/16	1/2	7/8	\$0.79	\$1.32	\$2.30	512
516	1 5/8	4	2 1/4	7/8	7/8	7/16	1/2	1 1/4	.87	1.40	2.45	516
‡520	2	5	2 5/8	1	15/16	1/2	5/8	1 1/4	.96	1.49	2.65	‡520
‡522	2 1/4	5 1/2	2 3/4	1 1/4	1	1/2	13/16	1 3/8	1.05	1.58	2.90	‡522
‡525	2 1/2	6	2 13/16	1 1/4	1 1/8	5/8	13/16	1 7/16	1.23	1.85	3.30	‡525
529	2 7/8	7	3 5/16	1 1/4	1 1/4	5/8	13/16	1 1/2	1.50	2.10	3.85	529
434	3 3/8	8	3 7/16	1 1/2	7/8	5/8	3/4	1 3/4	2.10	2.70	4.90	434
439	3 7/8	9	3 1/2	1 5/8	1 1/16	5/8	3/4	1 3/4	2.65	3.25	5.90	439

‡ Handle cone-shaped; see crank handle cut on opposite page.

† Hub is a sphere, flattened on top and bottom; full size drawing on request.



ARMSTRONG CRANK HANDLES

Drop Forged



Unfinished are plain forgings without hole in hub.

Broached have holes finished and hubs recessed or counter bored in free end, but are otherwise plain forgings.

Finished are broached, counterbored in free end of hub, ground, polished, case-hardened all over and black enameled.

The broached openings are made with corners slightly rounded to prevent breakage and a slight clearance is provided.

Holes are regularly finished to standard sizes given below, but each forging admits of broaching to the maximum dimensions stated. Smaller openings than standard and special sizes, running by sixteenths from 1/2 to 1 inch inclusive, and thence by eighths, can be broached to order at extra cost.

Hubs of broached, or finished can be cut to shorter lengths and handles will be offset (see small cut) if desired, at an additional charge.

No.	Length			Hub		Square Hole Size Broached		LIST PRICE Each			No.
	Center to Center	Ex-treme	Handle Above Arm	Diam.	Lgth.	Std. in Stock	Max. to Order	Unfin-ished	Broached	Finished	
0	1 3/4	2 5/8	2 3/8	1	1 1/4	1/2	5/8	\$0.70	\$1.22	\$1.85	00
0	2 1/4	3 1/8	2 1/2	1	1 1/4	1/2	5/8	.78	1.30	2.00	0
1	3	4	2 3/4	1 1/4	1 1/2	9/16	13/16	.88	1.40	2.30	1
2	3 1/2	4 1/2	2 7/8	1 1/16	1 5/16	1/2	5/8	.88	1.40	2.30	2
4	4	5 1/8	3 1/8	1 1/4	1 3/8	9/16	13/16	1.05	1.60	2.65	4
6	5	6 1/8	3 1/8	1 1/4	1 13/16	5/8	13/16	1.30	1.95	3.15	6
8	6	7 1/8	3 1/8	1 1/4	1 15/16	11/16	13/16	1.65	2.40	3.85	8
0	7	8 1/4	3 3/8	1 3/8	2 1/16	3/4	7/8	2.10	2.95	4.75	10
2	8	9 3/8	3 5/8	1 9/16	2 7/16	7/8	1	2.65	3.60	5.80	12
4	9 1/8	10 1/2	3 3/4	1 1/2	2 1/2	7/8	1	3.00	4.00	6.50	14
6	10	11 1/2	4	1 3/4	3	1	1 1/8	3.95	5.15	8.15	16

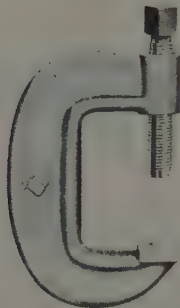


ARMSTRONG "C" CLAMPS

HEAVY DUTY PATTERN FOR MAXIMUM HOLDING POWER

Heavy Design with Long Hub, Extra Large Alloy Steel Screws

Drop Forged Steel



In design, quality of material and accuracy of machining, ARMSTRONG "C" clamps meet the demand for a strong, strictly high grade, reliable clamp.

ARMSTRONG "C" clamps for maximum service are drop forged from a select grade of steel and heat treated to insure the maximum degree of strength. The hubs are extra long and the screws, which are made of special alloy steel, are extra large, heat treated and have hardened points.

New No.	Old No.	Capacity		Depth Center of Screw to Back	Diameter of Screw	LIST PRICE Extra Screws Each	LIST PRICE Each Complete	New No.
		Max.	Min.					
0	9	3/4	0	3/4	3/8	\$0.20	\$ 1.00	0
1	10	1 1/4	0	1 1/8	7/16	.24	1.50	1
1 1/2	11	1 3/4	0	1 1/2	9/16	.28	2.50	1 1/2
2	12	2 1/4	7/8	1 7/8	11/16	.40	3.50	2
3	13	3 1/4	1 1/4	2 1/4	13/16	.56	5.00	3
4	14	4 1/2	1 3/4	2 3/4	15/16	.76	6.50	4
5	15	5 1/2	2 1/2	3 1/4	1	1.00	8.00	5
6	16	6 1/2	3 1/4	3 1/2	1 1/8	1.30	10.00	6
8	18	8 1/2	4 1/2	3 3/4	1 1/4	1.70	14.00	8
10	20	10 1/2	6	3 7/8	1 1/4	1.70	19.00	10
12	22	12 1/2	7 1/2	4	1 1/4	2.40	25.00	12

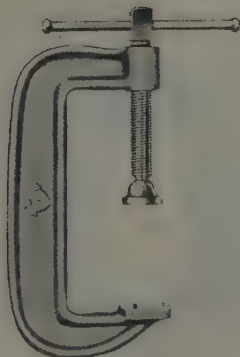
Note—Heavy "C" Clamps Nos. 2 to 12 can be furnished with full length screws when specified at special prices. With full length screws the minimum capacity of all clamps is 0.



ARMSTRONG "C" CLAMPS

MEDIUM SERVICE PATTERN FOR MAXIMUM UTILITY

Drop Forged Steel



This clamp is well adapted to that wide field of work which does not require the extra weight and extreme stiffness which make our heavy clamp unequalled for the very hardest service. The design and careful selection of material used combine the maximum of strength and stiffness consistent with convenient weight. It is drop forged of a select steel and is heat treated to increased tensile strength. The screw is heat treated.

Equipped with sliding pin handle and a swivel cap on the screw point.

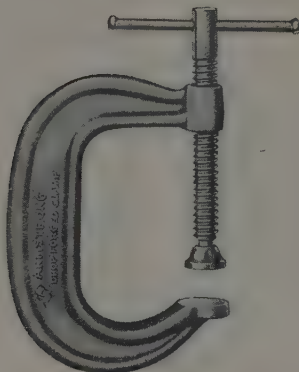
New No.	Old No.	Capacity		Depth Center of Screw to Back	Diameter of Screw	LIST PRICE Extra Screws with Handle and Swivel Each	LIST PRICE Each Complete	New No.
		Max.	Min.					
102	0	2	0	1 1/2	1/2	\$1.00	\$3.50	102
103	1	3	0	2	5/8	1.20	4.00	103
104	2	4	0	2 3/8	3/4	1.40	4.50	104
106	3	6	3	2 1/2	3/4	1.40	5.50	106
108	4	8	4	2 5/8	3/4	1.40	6.50	108
110	5	10	6	2 3/4	3/4	1.40	7.50	110
112	6	12	8	2 7/8	7/8	1.40	8.50	112
115	7	15	10	3 1/16	7/8	2.40	11.00	115
118	8	18	13	3 1/4	7/8	2.40	14.00	118



ARMSTRONG "C" CLAMPS

EXTRA DEEP THROAT PATTERN FOR MAXIMUM CLEARANCE

Drop Forged Steel



This clamp is designed with extra deep throat for maximum clearance required by body-builders, woodworkers and allied trades. The body is drop forged from a selected steel and is heat treated for maximum strength and stiffness. The screw is machined from selected steel and equipped with sliding pin handle and a swivel cap on the screw point.

No.	Capacity		Depth Center of Screw to Back	Diameter of Screw	LIST PRICE Extra Screws with Swivel and Handle Each	LIST PRICE Each Complete	No.
	Max.	Min.					
402	2	0	2	1/2	\$0.60	\$1.50	402
403	3	0	2 3/8	1/2	.70	1.80	403
404	4	0	2 3/4	5/8	.80	2.20	404
406	6	0	3 5/8	5/8	1.00	3.00	406
408	8	2	4 1/2	3/4	1.20	4.00	408
410	10	3	5 3/8	3/4	1.50	5.00	410
412	12	4	5 3/4	7/8	2.00	6.50	412

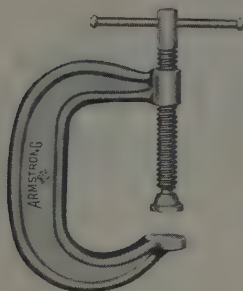


ARMSTRONG "C" CLAMPS

Spatter Resisting

EXTRA DEEP THROAT PATTERN FOR WELDING

Drop Forged Steel



This clamp is spatter resisting for welding. The body, swivel and screw are cadmium-plated all over to prevent welding spatter from sticking to them.

Especially designed with extra deep throat for maximum clearance required by body builders, wood workers, welding, etc. The body is drop forged from a selected steel and is heat treated for maximum strength and stiffness.

The screw is machined from selected steel and equipped with a sliding pin handle and a swivel cap on the screw point.

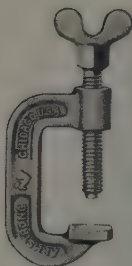
No.	Capacity		Depth Center of Screw to Back	Diameter of Screw	LIST PRICE Extra Screws With Swivel Each	LIST PRICE Each Complete	No.
	Max.	Min.					
402-S	2	0	2	1/2	\$0.90	\$1.80	402-S
403-S	3	0	2 3/8	1/2	1.10	2.25	403-S
404-S	4	0	2 3/4	5/8	1.35	2.90	404-S
406-S	6	0	3 5/8	5/8	1.60	3.75	406-S
408-S	8	2	4 1/2	3/4	1.85	4.75	408-S
410-S	10	3	5 3/8	3/4	2.10	6.00	410-S
412-S	12	4	5 3/4	7/8	2.60	7.50	412-S



ARMSTRONG "C" CLAMPS

For Tool Makers

Drop Forged Steel



With Plain Screw



With Swivel Screw

These clamps are drop forged from a selected steel and heat treated to increase the natural strength and toughness of the material.

The screws also are drop forged from a selected steel, are heat treated and are constructed with square necks to enable the user to set them up tightly by using a wrench.

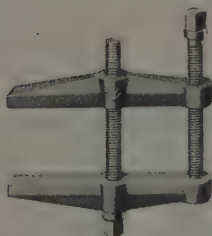
Furnished either with plain screw or swivel screw. Clamps with swivel screw will be furnished, unless plain screw type is specified.

New No.	Old No.	Capacity		Depth Center of Screw to Back	Diameter of Screw	LIST PRICE			New No.
		Max.	Min.			Extra Screws with Swivel Cap Each	With Plain Screw	Each Complete with Swivel Screw	
201	301	1	0	11/16	5/16	\$0.90	\$1.00	\$1.50	201
202	302	2	0	13/16	3/8	1.00	1.30	1.80	202
203	303	3	1	15/16	3/8	1.20	1.70	2.30	203
204	304	4	1 1/4	1 1/8	7/16	1.60	2.50	3.20	204



ARMSTRONG MACHINISTS' CLAMPS

Drop Forged Steel



ARMSTRONG Machinists' Clamps are drop forged from a selected grade steel, carefully machined and hardened. The under face of the center screw is convex, fitting into a concave seat to allow for tilting. The jaws are extra heavy, will not bend or spring on a short bite and are faced true. The screws are hardened.

Each clamp is boxed separately.

New No.	Old No.	Capacity	LIST PRICE Extra Screws Each*	LIST PRICE Each Complete	New No.
301	1	Opens to 1 1/4 in.	\$0.20	\$3.00	301
302	2	Opens to 2 1/4 in.	.24	4.00	302
303	3	Opens to 3 1/4 in.	.30	5.00	303
304	4	Opens to 4 1/4 in.	.40	6.00	304

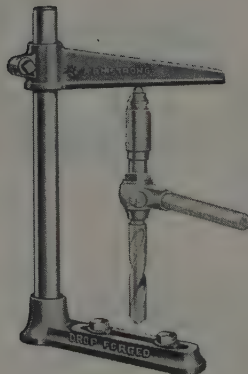
*In ordering extra screws it is necessary to specify whether center or heel screw is wanted.



ARMSTRONG DRILLING POST

For Use With Ratchet Drills

Drop Forged Steel



The foot and arm of ARMSTRONG Drilling Posts are drop forged of selected steel, carefully machined and heat treated. The finished steel post is screwed into the foot and can be easily removed for packing in a tool kit.

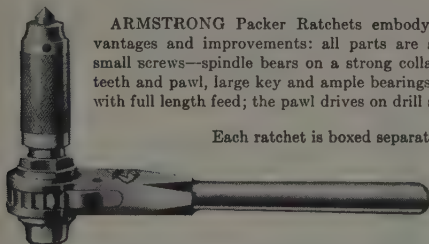
Each drilling post is boxed separately.

No.	Height of Post	Diameter of Post	Arm Radius	LIST PRICE Each	No.
10	20	1 1/4	10	\$12.00	10
12	26	1 1/2	12	15.00	12



ARMSTRONG IMPROVED PACKER RATCHET DRILLS

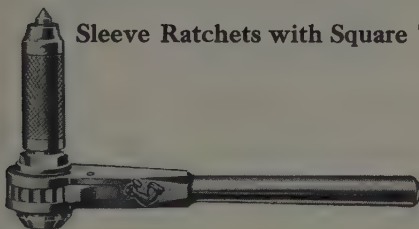
Sleeve Ratchets with Morse Taper Socket



ARMSTRONG Packer Ratchets embody the following advantages and improvements: all parts are steel, hardened; no small screws—spindle bears on a strong collar nut; extra strong teeth and pawl, large key and ample bearings; have shorter head with full length feed; the pawl drives on drill shank, not above it.

Each ratchet is boxed separately.

No.	Length	Size of Drill Socket	Takes Morse Taper Drill	Length of Head	Feed	LIST PRICE Each	No.
1-M	10	No. 2 Morse	37/64 to 29 32	6	2 1 4	\$13.15	1-M
2-M	12	No. 3 Morse	59/64 to 1 1 4	6 3/4	2 1 2	16.50	2-M
4-M	18	No. 4 Morse	1 17/64 to 2	9	3 1 2	25.50	4-M



Sleeve Ratchets with Square Taper Socket

No.	Length	Size of Drill Socket	Length of Head	Feed	LIST PRICE Each	No.
2	12	No. 1 Square Taper*	6 3/4	2 1/2	\$16.50	2
4	18	No. 2 Square Taper†	9	3 1/2	\$25.50	4

*Taking drill shank $\frac{3}{8}$ in. sq. at small end and $\frac{5}{8}$ in. sq. at large end.

†Taking drill shank $\frac{1}{2}$ in. sq. at small end and $\frac{3}{4}$ in. sq. at large end.

By means of sockets, these ratchets can be adapted to use of blacksmiths' drills with round shank.



ARMSTRONG

"STANDARD" REVERSIBLE RATCHET DRILLS

These Ratchet Drills meet the demand for a general service ratchet, which for design, workmanship and wear resisting qualities we believe to be unequalled.



Sleeve Ratchets
With Morse Taper Socket.

They are made of steel throughout and all parts are hardened with the exception of the handle. The body of this ratchet is drop forged of selected steel.

The reversing "jigger" is well protected and conveniently located, while the end of the handle is finished round and smooth for the operator's hand.

Each ratchet is packed separately in a cardboard box.

No.	Length	Size of Drill Socket	Takes Morse Taper Drills	Length of Head	Feed	LIST PRICE Each	No.
9-M	9	No. 1 Morse	1/16 to 9/16	5	2	\$11.25	9-M
12-M	12	No. 2 Morse	37/64 to 29/32	6	2 1/4	12.00	12-M
15-M	15	No. 3 Morse	59/64 to 1 1/4	6 3/4	2 1/2	13.50	15-M
22-M	22	No. 4 Morse	1 17/64 to 2	9	3 1/2	18.00	22-M

By means of sleeves and sockets, standard ratchets with Morse Taper Sockets can be made to take smaller drills, and drills with square taper and blacksmith's shank.



ARMSTRONG "STANDARD" REVERSIBLE RATCHET DRILL

These Ratchet Drills are made of steel throughout and all parts are hardened with the exception of the handle. The body of this ratchet is drop forged of selected steel.

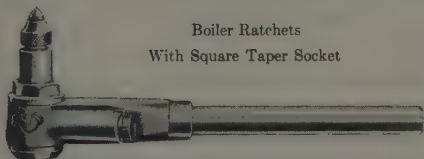
The reversing "jigger" is well protected and conveniently located, while the end of the handle is finished round and smooth for the operator's hand.

Each ratchet is packed separately in a cardboard box.



Sleeve Ratchets
With Square Taper Socket

No.	Length	Size of Drill Socket	Length of Head	Feed	LIST PRICE Each	No.
9	9	St'd Bit Stock Taper	5	2	\$10.90	9
12	12	No. 1 Square Taper*	6	2 1/4	11.25	12
22	22	No. 2 Square Taper†	9	3 1/2	17.25	22



Boiler Ratchets
With Square Taper Socket

No.	Length	Size of Drill Socket	Length of Head	Feed	LIST PRICE Each	No.
9-B	9	St'd Bit Stock Taper	3 1/4	1 1/8	\$10.15	9-B
12-B	12	No. 1 Square Taper*	4 3/8	1 1/2	10.90	12-B
22-B	22	No. 2 Square Taper†	6	2 1/4	16.90	22-B

*Taking drill shank $\frac{3}{8}$ in. sq. at small end and $\frac{5}{8}$ in. sq. at large end.

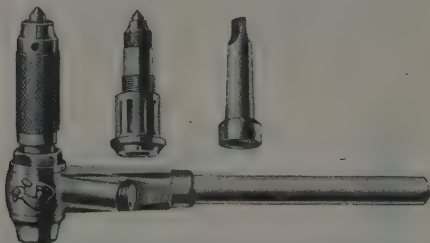
†Taking drill shank $\frac{1}{2}$ in. sq. at small end and $\frac{3}{4}$ in. sq. at large end.

By means of sockets, these ratchets can be adapted to use of blacksmiths' drills with round shank.



ARMSTRONG

"STANDARD" REVERSIBLE RATCHET DRILLS



Standard Ratchet Combination

This combination includes sleeve ratchet for Morse Taper Shank Drills, Square Taper Socket to fit same and a short spindle with feed screw by means of which the ratchet can be converted into a boiler ratchet or adapted to use square taper shank drills.

They are made of steel throughout and all parts are hardened with the exception of the handle, which is steel tubing. The body of this ratchet is drop forged of selected steel.

The reversing "jigger" is well protected and conveniently located, while the end of the handle is finished round and smooth for the operator's hand.

Each ratchet is packed separately in a cardboard box.

No.	Length	Size of Drill Sockets	LIST PRICE Complete	No.
9-C	9	Standard Bit Stock and No. 1 Morse	\$16.90	9-C
12-C	12	No. 1 Square Taper and No. 2 Morse	17.25	12-C
15-C	15	No. 1 Square Taper and No. 3 Morse	20.25	15-C
22-C	22	No. 2 Square Taper and No. 4 Morse	25.90	22-C

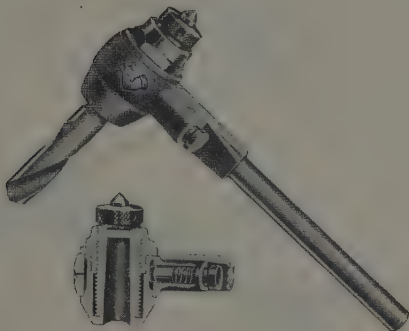


ARMSTRONG SHORT RATCHET DRILLS

Patented

For Drills With Morse Taper Shank

Short Head—Long Feed—Reversible



The sectional view shows clearly the construction, which is simple, compact and strong. All parts are made from drop forgings or bar steel. Pawl and center are tool steel, carefully tempered. It is self-discharging and can be reversed instantly. Each ratchet is boxed separately.

No.	Socket	Length	Length Head	Feed	LIST PRICE Each	No.
62-R	No. 3 Morse	15	3 3/4	2 1/2	\$18.00	62-R

Extra Spindles

Spindle with nut and feed screw, each.....\$7.90

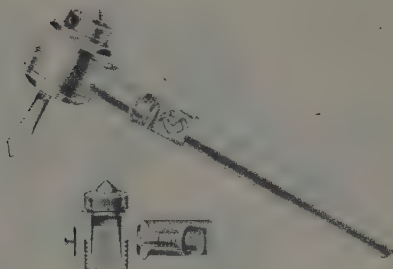
Note:—Style A and E Spindles for square taper shank drills (see page following) are interchangeable with Style R. By means of sleeves and sockets, Style R Spindles can be adapted to take smaller sizes of Morse Taper Shank Drills and drills with square taper and blacksmiths' shanks.



ARMSTRONG SHORT RATCHET DRILL

Patented

FOR DRILLS WITH SQUARE TAPER SHANK



This is the very shortest ratchet drill made, length of feed considered, and will be found extremely useful, wherever holes have to be drilled in places where height of space is limited. Its short head, strength, compactness and quick reverse make it a perfect boiler ratchet. All parts are drop forged or made from bar steel. Pawl and center are tool steel, carefully tempered. Each ratchet is boxed separately.

No.	Socket Square Taper	Length	Length Head	Feed	LIST PRICE Each	No.
62-A	No. 1	15	2 3 4	1 1 2	\$18.00	62-A
62-E	No. 2	15	2 3 4	1 1 2	18.00	62-E

Extra Spindles

Spindle with nut and feed screw, each.....\$7.90

Note—Style R Spindles for Morse Taper Shank Drills (see page 101.) are interchangeable with styles A and E. By means of sockets, this ratchet can be adapted to use of blacksmiths' drills with round shank.

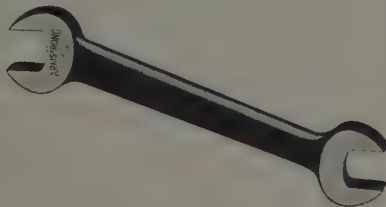


ARMSTRONG HI-TEN WRENCHES

Drop Forged—Selected Steel

ARMSTRONG HI-TEN Wrenches are forged from steel which careful tests and analysis have shown to possess the requisite qualities to give both stiffness and tensile strength.

The designs and proportions are based upon practical knowledge of wrench requirements while modern equipment and manufacturing methods insure accuracy and uniformity in both machining and finish.



FINISHED wrenches are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal listed sizes to allow for proper clearance.

WRENCHES WITH SPECIAL OPENINGS—In lots of 100 or more of any size for which we have the necessary tools, wrenches, as listed, can be furnished with special openings at no extra charge.

SPECIAL PATTERN WRENCHES—In addition to the standard patterns listed, we are also prepared to furnish practically any special wrench in reasonable quantities. Send your specifications for quotation.

WHEN ORDERING wrenches be careful to specify catalog numbers and nominal size of openings as listed.

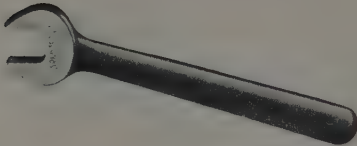
For a complete description of ARMSTRONG ARMALLOY Super Quality Wrenches, see page 129.



ARMSTRONG HI-TEN WRENCHES

ENGINEERS' PATTERN

15° Angle, Single Head
Drop Forged—Selected Steel

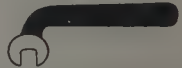


HI-TEN Engineers' Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth and Metric wrenches see page 184. Beginning with No. 11 all wrenches are of this style but have tapered handles.

All openings are slightly larger than nominal sizes listed to allow for proper clearance.

On special order these wrenches can be furnished bent to 45° or 90° angle at an additional charge; see 90° cut at right.



No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	LIST PRICE Each Finished	No.
S-000	3/16				*#2 & #3	3	\$ 0.28	S-000
S-00	1/4				*#4	3	.28	S-00
00	5/16	1/8	1/8		*#5 & #6	4	.28	00
700	3/8		3/16		*#10	4	.30	700
0	13/32	3/16				4	.30	0
701	7/16		1/4	1/4	1/4 & *#12	4 1/2	.36	701
1	1/2	1/4	5/16	5/16		4 1/2	.36	1
702	9/16		3/8	3/8	5/16	5 3/8	.44	702
2	19/32	5/16				5 3/8	.44	2
703	5/8		7/16	7/16	3/8	6 3/8	.52	703
3	11/16	3/8				6 3/8	.52	3
704	3/4		1/2	1/2	7/16	7 1/4	.64	704
4	25/32	7/16				7 1/4	.64	4
705	13/16		9/16		1/2	8 1/4	.76	705
5	7/8	1/2	5/8	9/16	9/16	8 1/4	.76	5
6-A	15/16			5/8		9	.92	6-A
6	31/32	9/16				9	.92	6
706	1		3/4		5/8	9	.92	706



ARMSTRONG HI-TEN WRENCHES

ENGINEERS' PATTERN

15° Angle, Single Head
Drop Forged—Selected Steel

(Continued from page 104)

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth and Metric wrenches see page 184. Beginning with No. 11 all wrenches have tapered handles.

The following wrenches have hole of diameter given below in end of handle:

No. 17 17A 18 18A 19 19A 19B 19C 20 20A 20B 21A 21B 21C 22A 22B
Hole 5/8 5/8 3/4 3/4 7/8 7/8 7/8 7/8 1 1 1 1-1/8 1-1/8 1-1/8 1-1/4 1-1/4"

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex. Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	LIST PRICE Each Finished	No.
7	1 1/16	5/8		3/4		10 1/2	\$ 1.14	7
707	1 1/8		7/8		3/4	10 1/2	1.14	707
8	1 1/4	3/4	(†1)	7/8		11 3/4	1.50	8
8-A	1 5/16		1		7/8	11 3/4	1.50	8-A
708-A	1 3/8		(†1 1/8)			11 3/4	1.50	708-A
9	1 7/16	7/8		1		13 1/2	2.30	9
709	1 1/2		1 1/8 (†1 1/4)		1	13 1/2	2.30	709
10	1 5/8	1		1 1/8		15 1/4	3.20	10
10-A	1 11/16		1 1/4		1 1/8	15 1/4	3.20	10-A
11	1 13/16	1 1/8		1 1/4		17	4.20	11
11-A	1 7/8				1 1/4	17	4.20	11-A
12	2	1 1/4		1 3/8		19	5.70	12
12-A	2 1/16				1 3/8	19	5.70	12-A
13	2 3/16	1 3/8		1 1/2		21	7.30	13
13-A	2 1/4				1 1/2	21	7.30	13-A
14	2 3/8	1 1/2				23	9.20	14
14-A	2 7/16				1 5/8	23	9.20	14-A
15	2 9/16	1 5/8				25	11.20	15
15-A	2 5/8				1 3/4	25	11.20	15-A
16	2 3/4	1 3/4				27	13.40	16
16-B	2 13/16				1 7/8	27	13.40	16-B
16-A	2 15/16	1 7/8				27	13.40	16-A
17-A	3				2	30	20.50	17-A
17	3 1/8	2				30	20.50	17
18-A	3 3/8				2 1/4	33	29.50	18-A
18	3 1/2	2 1/4				33	29.50	18
19-B	3 3/4				2 1/2	37	42.00	19-B
19	3 7/8	2 1/2				37	42.00	19
19-C	4 1/8				2 3/4	37	42.00	19-C
19-A	4 1/4	2 3/4				37	42.00	19-A
20-B	4 1/2				3	42	62.00	20-B
20	4 5/8	3				42	62.00	20
20-A	5	3 1/4				42	62.00	20-A
21-A	5 3/8	3 1/2				47	114.00	21-A
21-B	5 3/4	3 3/4				47	114.00	21-B
21-C	6 1/8	4				47	114.00	21-C
22-A	6 7/8	4 1/2				52	204.00	22-A
22-B	7 5/8	5				52	204.00	22-B

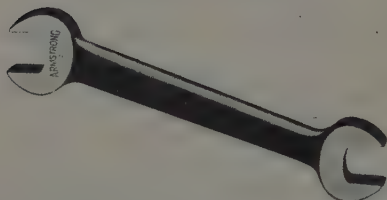
†Old style cap screw—now obsolete.



ARMSTRONG HI-TEN WRENCHES

ENGINEERS' PATTERN

15° Angle, Double Head
Drop Forged—Selected Steel



HI-TEN Engineers' Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal sizes of openings.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth and Metric wrenches see page 184.

FOR CAREFULLY SELECTED HI-TEN WRENCH SETS SEE PAGE 108

No.	Nominal Openings	For Amer. Std. Heavy Nuts (U.S.S); Size Bolts	For Amer. Std. Hex. Head Cap Screws; Dia. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Ex- treme Length Approx.	List Price Each Fin- ished	No.
721	5/16 & 3/8	1/8	1/8 & 3/16			4 1/8	\$0.34	721
723	3/8 & 7/16		3/16 & 1/4	1/4	1/4	5	.42	723
725	7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	5 7/8	.50	725
725-A	7/16 & 9/16		1/4 & 3/8	1/4 & 3/8	1/4 & 5/16	5 7/8	.50	725-A
725-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	6 1/4	.50	725-B
25	1/2 & 19/32	1/4 & 5/16	5/16	5/16		6 1/4	.50	25
727	9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	6 3/4	.62	727
27	19/32 & 11/16	5/16 & 3/8				7	.62	27
27-B	5/8 & 11/16	3/8	7/16	7/16	3/8	7	.62	27-B
28	19/32 & 25/32	5/16 & 7/16				7 1/2	.74	28
729	5/8 & 3/4		7/16 & 1/2	7/16 & 1/2	3/8 & 7/16	7 1/2	.74	729
29-B	11/16 & 3/4	3/8	1/2	1/2	7/16	8 1/8	.74	29-B
29	11/16 & 25/32	3/8 & 7/16				8 1/8	.74	29
29-C	11/16 & 13/16	3/8	9/16		1/2	8 1/8	.74	29-C
731	3/4 & 13/16		1/2 & 9/16	1/2	7/16 & 1/2	9 1/4	.90	731
731-A	3/4 & 7/8	1/2	1/2 & 5/8	1/2 & 9/16	7/16 & 9/16	9 1/4	.90	731-A
31-B	25/32 & 13/16	7/16	9/16		1/2	9 1/4	.90	31-B
31	25/32 & 7/8	7/16 & 1/2	5/8	9/16	9/16	9 1/4	.90	31
731-B	13/16 & 7/8	1/2	9/16 & 5/8	9/16	1/2 & 9/16	9 1/4	.90	731-B
32-B	13/16 & 15/16		9/16	5/8	1/2	9 7/8	1.10	32-B
33-A	7/8 & 15/16	1/2	5/8	9/16 & 5/8	9/16	9 7/8	1.10	33-A
733	7/8 & 1	1/2	5/8 & 3/4	9/16	9/16 & 5/8	9 7/8	1.10	733
33-C	15/16 & 1		3/4	5/8	5/8	9 7/8	1.10	33-C

(Continued on page 107)



ARMSTRONG HI-TEN WRENCHES

ENGINEERS' PATTERN

15° Angle, Double Head
Drop Forged—Selected Steel

(Continued from page 106)

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth and Metric wrenches see page 184.

FOR CAREFULLY SELECTED HI-TEN WRENCH SETS SEE PAGE 108

No.	Nominal Openings	For Amer. Std. HEAVY Nuts (UNS); Size Bolts	For Amer. Std. Hex Head Cap Screws; Dia. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Nuts Size Bolts	Extreme Length Approx.	LIST PRICE Each Fin- ished	No.
34	7/8 & 1 1/16	1/2 & 5/8	5/8	9/16 & 3/4	9/16	11 1/4	1.36	34
34-A	15/16 & 1 1/16	5/8		5/8 & 3/4		11 1/4	1.36	34-A
735	1 & 1 1/8		3/4 & 7/8		5/8 & 3/4	11 1/4	1.36	735
36-B	1 1/16 & 1 1/8	5/8	7/8	3/4	3/4	12 1/4	1.92	36-B
37	1 1/16 & 1 1/4	5/8 & 3/4		3/4 & 7/8		12 1/4	1.92	37
737	1 1/8 & 1 1/4	3/4	7/8	7/8	3/4	12 1/4	1.92	737
37-A	1 1/8 & 1 5/16		7/8 & 1		3/4 & 7/8	12 1/4	1.92	37-A
39-B	1 1/4 & 1 5/16	3/4	1	7/8	7/8	13 3/4	2.80	39-B
39	1 1/4 & 1 7/16	3/4 & 7/8		7/8 & 1		13 3/4	2.80	39
39-A	1 5/16 & 1 1/2		1 & 1 1/8		7/8 & 1	13 3/4	2.80	39-A
39-C	1 3/8 & 1 7/16	7/8		1		13 3/4	2.80	39-C
41	1 7/16 & 1 5/8	7/8 & 1		1 & 1 1/8		15 1/2	3.80	41
41-B	1 1/2 & 1 5/8	1	1 1/8	1 1/8	1	15 1/2	3.80	41-B
42-A	1 1/2 & 1 11/16		1 1/8 & 1 1/4		1 & 1 1/8	17	5.30	42-A
43	1 5/8 & 1 13/16	1 & 1 1/8		1 1/8 & 1 1/4		17	5.30	43
44-A	1 11/16 & 1 7/8		1 1/4		1 1/8 & 1 1/4	19	7.20	44-A
45	1 13/16 & 2	1 1/8 & 1 1/4		1 1/4 & 1 3/8		19	7.20	45
45-A	1 7/8 & 2 1/16				1 1/4 & 1 3/8	19	7.20	45-A
47	2 & 2 3/16	1 1/4 & 1 3/8		1 3/8 & 1 1/2		21	10.50	47
47-B	2 1/16 & 2 1/4				1 3/8 & 1 1/2	21	10.50	47-B
49	2 3/16 & 2 3/8	1 3/8 & 1 1/2		1 1/2		23	14.00	49
49-A	2 1/4 & 2 7/16				1 1/2 & 1 5/8	23	14.00	49-A
51	2 3/8 & 2 9/16	1 1/2 & 1 5/8				25	19.80	51
51-A	2 7/16 & 2 5/8				1 5/8 & 1 3/4	25	19.80	51-A
53	2 9/16 & 2 3/4	1 5/8 & 1 3/4				27	24.00	53
53-A	2 5/8 & 2 13/16				1 3/4 & 1 7/8	27	24.00	53-A
54-C	2 3/4 & 2 15/16	1 3/4 & 1 7/8				31	28.50	54-C
55-A	2 13/16 & 3				1 7/8 & 2	32	31.00	55-A
55-B	2 15/16 & 3 1/8	1 7/8 & 2				32	31.00	55-B
57-B	3 & 3 3/8				2 & 2 1/4	37	47.00	57-B
57	3 1/8 & 3 1/2	2 & 2 1/4				37	47.00	57
58-A	3 3/8 & 3 3/4				2 1/4 & 2 1/2	38	62.00	58-A
58	3 1/2 & 3 7/8	2 1/4 & 2 1/2				38	62.00	58
60-A	3 3/4 & 4 1/8				2 1/2 & 2 3/4	40	75.00	60-A
60	3 7/8 & 4 1/4	2 1/2 & 2 3/4				40	75.00	60
62-A	4 1/8 & 4 1/2				2 3/4 & 3	43	94.00	62-A
62	4 1/4 & 4 5/8	2 3/4 & 3				43	94.00	62
63-A	4 5/8 & 5	3 & 3 1/4				47	135.00	63-A
64-A	5 & 5 3/8	3 1/4 & 3 1/2				47	135.00	64-A



ARMSTRONG HI-TEN ENGINEERS' WRENCH SETS

**15° Angle, Double Head
Drop Forged—Selected Steel**

HI-TEN Engineers' Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

All openings are slightly larger than nominal sizes listed to allow for proper clearance.



Set No. 9-38R

Nine Wrenches with openings 3/8" to 1 5/8"
No duplications.
Fits the following 38 sizes of bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16,
1/2, 5/8, 3/4, 7/8, 1
Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8,
7/16, 1/2, 5/8, 3/4, 7/8, 1
Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16,
1/2, 9/16, 5/8, 3/4, 7/8, 1, 1 1/8
Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16,
5/8, 3/4, 7/8

Wrenches Included Are:

No.	Openings	Length
723	3/8 & 7/16	5
25	1/2 & 19/32	6 1/4
727	9/16 & 5/8	6 3/4
29	11/16 & 25/32	8 1/8
731-A	3/4 & 7/8	9 1/4
33-C	15/16 & 1	9 7/8
37	1 1/16 & 1 1/4	12 1/4
37-A	1 1/8 & 1 5/16	12 1/4
41	1 7/16 & 1 5/8	15 1/2

LIST
PRICE

No. 9-38 In Cardboard Box.....\$11.90

No. 9-38R In Roll.....14.15

Approximate Weight—10 3/4 lbs.



Set No. 6-26R

Six Wrenches with openings 3/8" to 1". No duplications.

Fits the following 26 sizes of bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16, 1/2
Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8,
7/16, 1/2, 5/8, 3/4
Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16,
1/2, 9/16, 5/8
Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16, 5/8

Wrenches Included Are:

No.	Openings	Length
723	3/8 & 7/16	5
25	1/2 & 19/32	6 1/4
727	9/16 & 5/8	6 3/4
29	11/16 & 25/32	8 1/8
731-A	3/4 & 7/8	9 1/4
33-C	15/16 & 1	9 7/8

LIST PRICE

No. 6-26 In Cardboard Box.....\$4.25

No. 6-26R In Roll.....5.90

Approximate Weight—2 3/4 lbs.



ARMSTRONG HI-TEN WRENCHES

CAR PATTERN

22 1/2° Angle, Double Head
Long Leverage—Selected Steel
Drop Forged



HI-TEN Car Wrenches are drop forged from selected steel, are accurately milled, carefully hardened throughout and grit-blasted. The wrench heads are not ground bright but are plainly stamped with catalog number and nominal sizes of openings.

In stock with openings listed. For wrenches with special openings see page 103.

No.	Nominal Openings	For Amer. Std. HEAVY Nuts (USS); Size Bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Extreme Length, Approx.	LIST PRICE Each Hardened	No.
367-A 367	5/8 & 13/16 11/16 & 7/8	3/8 & 1/2	3/8 & 1/2 9/16	12 12	\$1.50 1.50	367-A 367
370-C 370-A 370 370-B	13/16 & 7/8 13/16 & 1 7/8 & 1 1 & 1/8	1/2 1/2 & 5/8	1/2 & 9/16 1/2 & 5/8 9/16 5/8 & 3/4	19 19 19 19	2.50 2.50 2.50 2.50	370-C 370-A 370 370-B
372-A 373	1 1/16 & 1 1/4 1 1/8 & 1 5/16	5/8 & 3/4	3/4 & 7/8	20 20	3.10 3.10	372-A 373
376-A 376	1 1/4 & 1 7/16 1 5/16 & 1 1/2	3/4 & 7/8	7/8 & 1	21 21	3.70 3.70	376-A 376
378-A 379	1 7/16 & 1 5/8 1 1/2 & 1 11/16	7/8 & 1	1 & 1 1/8	22 22	4.50 4.50	378-A 379
382-A 382	1 5/8 & 1 13/16 1 11/16 & 1 7/8	1 & 1 1/8	1 1/8 & 1 1/4	23 23	5.30 5.30	382-A 382
383-B 385	1 7/8 & 2 1/4 1 13/16 & 2	1 1/8 & 1 1/4	1 1/4 & 1 1/2	24 24	6.30 6.30	383-B 385
389 389-B	2 & 2 3/8 2 3/16 & 2 3/8	1 1/4 & 1 1/2 1 3/8 & 1 1/2		25 25	9.00 9.00	389 389-B



ARMSTRONG HI-TEN WRENCHES

THIN PATTERN

For Check, Jam or Lock Nuts
15° Angle, Single Head
Drop Forged—Selected Steel



HI-TEN Thin Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth and Metric wrenches see page 184.

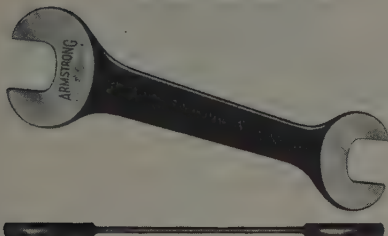
No.	Nominal Opening	For Amer. Std. HEAVY Jam Nut (USS); Size Bolt	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Jam Nut; Size Bolt	Extreme Length, Approx.	Thickness Head	LIST PRICE Each Finished	No.
601-A	7/16		1/4	1/4	4	5/32	\$0.36	601-A
501	1/2	1/4	5/16		4	5/32	.36	601
602-A	9/16		3/8	5/16	4 1/2	11/64	.44	602-A
502	19/32	5/16			4 1/2	11/64	.44	602
603-A	5/8		7/16	3/8	5 1/4	3/16	.52	603-A
603	11/16	3/8			5 1/4	3/16	.52	603
604-A	3/4		1/2	7/16	6	7/32	.64	604-A
504	25/32	7/16			6	7/32	.64	604
605-A	13/16			1/2	6 3/4	1/4	.76	605-A
605	7/8	1/2	9/16	9/16	6 3/4	1/4	.76	605
606	31/32	9/16			7 1/2	9/32	.90	606
606-B	1			5/8	7 1/2	9/32	.90	606-B
607	1 1/16	5/8	3/4		8 1/2	5/16	1.08	607
607-A	1 1/8			3/4	8 1/2	5/16	1.08	607-A
608	1 1/4	3/4	7/8		10	3/8	1.36	608
608-A	1 5/16			7/8	10	3/8	1.36	608-A
609	1 7/16	7/8	1		11 1/2	7/16	1.84	609
609-A	1 1/2			1	11 1/2	7/16	1.84	609-A
610	1 5/8	1	1 1/8		13	1/2	2.60	610
610-A	1 11/16			1 1/8	13	1/2	2.60	610-A



ARMSTRONG HI-TEN WRENCHES

THIN PATTERN

For Check, Jam or Lock Nuts
15° Angle, Double Head
Drop Forged—Selected Steel



HI-TEN Thin Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of openings.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth and Metric wrenches see page 184.

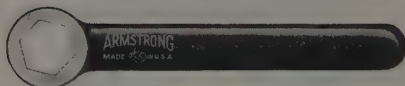
No.	Nominal Openings	For Amer. Std. HEAVY Jam Nuts (USS); Size Bolts	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Jam Nuts; Size Bolts	Extreme Length, Approx.	Thick- ness Head	LIST PRICE Each Finished	No.
623-D	7/16 & 1/2	1/4	1/4 & 5/16	1/4	4 1/2	5/32	\$0.50	623-D
624-A	7/16 & 9/16		1/4 & 3/8	1/4 & 5/16	4 1/2	5/32	.50	624-A
624-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16	4 1/2	5/32	.50	624-B
625	1/2 & 19/32	1/4 & 5/16	5/16		4 1/2	5/32	.50	625
626-S	9/16 & 5/8		3/8 & 7/16	5/16 & 3/8	5 5/8	3/16	.64	626-S
627	19/32 & 11/16	5/16 & 3/8			5 5/8	3/16	.64	627
629-D	5/8 & 3/4		7/16 & 1/2	3/8 & 7/16	6 1/4	3/16	.72	629-D
629	11/16 & 25/32	3/8 & 7/16			6 1/4	3/16	.72	629
630-B	3/4 & 13/16		1/2	7/16 & 1/2	6 5/8	7/32	.80	630-B
630-E	3/4 & 7/8	1/2	1/2 & 9/16	7/16 & 9/16	6 5/8	7/32	.80	630-E
631	25/32 & 7/8	7/16 & 1/2	9/16	9/16	6 5/8	7/32	.80	631
631-A	13/16 & 7/8	1/2	9/16	1/2 & 9/16	6 5/8	7/32	.80	631-A
632-C	7/8 & 15/16	1/2	9/16 & 5/8	9/16	8 1/8	9/32	1.12	632-C
634-A	7/8 & 1	1/2	9/16	9/16 & 5/8	8 1/8	9/32	1.12	634-A
634-B	15/16 & 1 1/16	5/8	5/8 & 3/4		8 1/8	9/32	1.12	634-B
635-D	1 & 1 1/8			5/8 & 3/4	10	11/32	1.68	635-D
637	1 1/16 & 1 1/4	5/8 & 3/4	3/4 & 7/8		10	11/32	1.68	637
637-A	1 1/8 & 1 5/16			3/4 & 7/8	10	11/32	1.68	637-A
639	1 1/4 & 1 7/16	3/4 & 7/8	7/8 & 1		12	13/32	2.60	639
640-A	1 5/16 & 1 1/2			7/8 & 1	12	13/32	2.60	640-A



ARMSTRONG HI-TEN WRENCHES

HEXAGON BOX

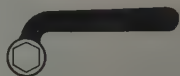
Regular Pattern—15° Angle
Drop Forged—Selected Steel



HI-TEN Hexagon Box Wrenches are drop forged from selected steel, are accurately broached, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth wrenches see page 184.

On special orders these wrenches can be furnished bent to 45° or 90° angle at an additional charge; see 90° cut at right.



No.	Nominal Opening Across Flats	Amer. Std. HEAVY Nut (U.S.S.) Size Bolt	Amer. Std. Hex. Head Cap Screw; Dia. Screw	Amer. Std. LIGHT Nut (SAE); Size Bolt	Amer. Std. REG. Nut; Size Bolt	Extreme Length, Approx.	Head		LIST PRICE Each, Finished	No.
							Thick-ness	Outside Diameter		
801-A	7/16		1/4	1/4	1/4	4	17/64	27/32	\$0.42	801-A
801	1/2	1/4	5/16			4	17/64	27/32	.42	801
802-A	9/16		3/8	3/8	5/16	4 3/4	5/16	63/64	.50	802-A
802	19/32	5/16				4 3/4	5/16	63/64	.50	802
803-A	5/8		7/16	7/16	3/8	5 1/2	23/64	1 9/64	.58	803-A
803	11/16	3/8				5 1/2	23/64	1 9/64	.58	803
804-A	3/4		1/2	1/2	7/16	6 1/2	13/32	1 9/32	.70	804-A
804	25/32	7/16				6 1/2	13/32	1 9/32	.70	804
805-A	13/16		9/16		1/2	7 1/4	29/64	1 27/64	.84	805-A
805	7/8	1/2	5/8	9/16	9/16	7 1/4	29/64	1 27/64	.84	805
806	31/32	9/16				8	1/2	1 19/32	1.00	806
806-B	1		3/4		5/8	8	1/2	1 19/32	1.00	806-B
807	1 1/16	5/8		3/4		9 1/2	9/16	1 25/32	1.24	807
807-A	1 1/8		7/8		3/4	9 1/2	9/16	1 25/32	1.24	807-A
808	1 1/4	3/4		7/8		10 3/4	9/16	2 1/16	1.56	808
808-A	1 5/16		1		7/8	10 3/4	9/16	2 1/16	1.56	808-A
809	1 7/16	7/8		1		12	21/32	2 3/8	2.08	809
809-A	1 1/2		1 1/8		1	12	21/32	2 3/8	2.08	809-A
810	1 5/8	1		1 1/8		13 1/2	3/4	2 5/8	2.80	810
810-A	1 11/16		1 1/4		1 1/8	13 1/2	3/4	2 5/8	2.80	810-A
811	1 13/16	1 1/8		1 1/4		15	13/16	2 29/32	3.70	811
811-A	1 7/8				1 1/4	15	13/16	2 29/32	3.70	811-A
812	2	1 1/4		1 3/8		16 1/2	15/16	3 1/4	4.80	812
812-A	2 1/16				1 3/8	16 1/2	15/16	3 1/4	4.80	812-A
813	2 3/16	1 3/8		1 1/2		18	1	3 31/64	6.00	813
813-A	2 1/4				1 1/2	18	1	3 31/64	6.00	813-A
814	2 3/8	1 1/2				20	1 1/16	3 23/32	7.50	814



ARMSTRONG HI-TEN WRENCHES

HEXAGON BOX

Heavy Pattern—15° Angle

Drop Forged—Selected Steel

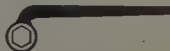


HI-TEN Heavy Pattern Hexagon Box Wrenches are drop forged from selected steel, accurately broached, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

These Box Wrenches are designed for the most severe service where extra strength is required.

In stock with openings listed. For wrenches with special openings see page 103.

On special orders these wrenches can be furnished bent to 45° or 90° angle at an additional charge; see 90° cut at right.



No.	Nominal Opening Across Flats	Amer. Std. HEAVY Nut (U.S.S.)	Amer. Std. Hex Hd. Cap Screw	Amer. Std. LIGHT Nut (S.A.E.)	Amer. Std. REG. Nut	Extreme Length, Approx.	Head		LIST PRICE Each	No.
							Thick- ness	Outside Diam.		
H808	1 1/4	3/4		7/8		11 1/2	13/16	2 1/16	\$ 2.20	H808
H808A	1 5/16		1		7/8	11 1/2	13/16	2 1/16	2.20	H808A
H809	1 7/16	7/8		1		13 3/8	15/16	2 3/8	2.95	H809
H809A	1 1/2		1 1/8		1	13 3/8	15/16	2 3/8	2.95	H809A
H810	1 5/8	1		1 1/8		15 1/4	1 1/8	2 5/8	3.90	H810
H810A	1 11/16		1 1/4		1 1/8	15 1/4	1 1/8	2 5/8	3.90	H810A
H811	1 13/16	1 1/8		1 1/4		17	1 1/4	2 15/16	5.15	H811
H811A	1 7/8				1 1/4	17	1 1/4	2 15/16	5.15	H811A
H812	2	1 1/4		1 3/8		19	1 3/8	3 1/4	6.65	H812
H813	2 3/16	1 3/8		1 1/2		21	1 1/2	3 1/2	8.40	H813
H813A	2 1/4				1 1/2	21	1 1/2	3 1/2	8.40	H813A
H814	2 3/8	1 1/2				23	1 5/8	3 3/4	10.50	H814
H815	2 9/16	1 5/8				25	1 3/4	4 1/8	13.00	H815
H815A	2 5/8				1 3/4	25	1 3/4	4 1/8	13.00	H815A
H816	2 3/4	1 3/4				27	1 7/8	4 9/16	17.50	H816
H817A	3				2	30	2	4 13/16	24.00	H817A
H817	3 1/8	2				30	2	4 13/16	24.00	H817



ARMSTRONG HI-TEN WRENCHES

HEXAGON BOX

Striking Face Pattern—15° Angle
Heavy and Regular
Drop Forged—Selected Steel



HI-TEN Striking Face Wrenches are drop forged from selected steel, are accurately broached, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

These wrenches are especially designed for heavy work in close quarters where large nuts must be set up, or frozen nuts loosened.

In stock with openings listed. For wrenches with special openings see page 103.

HEAVY PATTERN

No.	Nominal Opening Across Flats	Amer. Std. HEAVY Nut (U.S.S.)	Amer. Std. Hex. Head Cap Screw	Amer. Std. LIGHT Nut (S.A.E.)	Amer. Std. REGULAR Nut	Extreme Length Approx.	HEAD		LIST Price Each
							Thick-ness	Outside Diameter	
SFH-808	1 1/4	3/4		7/8		7	13/16	2 1/16	\$9.75
SFH-808A	1 5/16		1		7/8	7	13/16	2 1/16	9.75
SFH-809	1 7/16	7/8		1		8	15/16	2 3/8	10.50
SFH-809A	1 1/2		1 1/8		1	8	15/16	2 3/8	10.50
SFH-810	1 5/8	1		1 1/8		9	1 1/8	2 5/8	11.45
SFH-810A	1 11/16		1 1/4		1 1/8	9	1 1/8	2 5/8	11.45
SFH-811	1 13/16	1 1/8		1 1/4		10	1 1/4	2 15/16	12.70
SFH-811A	1 7/8				1 1/4	10	1 1/4	2 15/16	12.70
SFH-812	2	1 1/4		1 3/8		11	1 3/8	3 1/4	14.20
SFH-813	2 3/16	1 3/8		1 1/2		12	1 1/2	3 1/2	15.95
SFH-813A	2 1/4				1 1/2	12	1 1/2	3 1/2	15.95
SFH-814	2 3/8	1 1/2				13	1 5/8	3 3/4	18.00
SFH-815	2 9/16	1 5/8				14	1 3/4	4 1/8	21.00
SFH-815A	2 5/8				1 3/4	14	1 3/4	4 1/8	21.00
SFH-816	2 3/4	1 3/4				15	1 7/8	4 9/16	25.50
SFH-817A	3				2	17	2	4 13/16	32.45
SFH-817	3 1/8	2				17	2	4 13/16	32.45

REGULAR PATTERN

SF-818A	3 3/8				2 1/4	18	1 1/2	5 1/4	32.00
SF-818	3 1/2	2 1/4				18	1 1/2	5 1/4	32.00
SF-819B	3 3/4				2 1/2	19	1 5/8	5 7/8	39.00
SF-819	3 7/8	2 1/2				19	1 5/8	5 7/8	39.00
SF-819AC	4 1/8				2 3/4	20	1 3/4	6 1/2	47.00
SF-819A	4 1/4	2 3/4				20	1 3/4	6 1/2	47.00
SF-820B	4 1/2				3	21	1 7/8	7	60.00
SF-820	4 5/8	3				21	1 7/8	7	60.00



ARMSTRONG HI-TEN WRENCHES

SQUARE BOX PATTERN

For Set Screws, Square Cap Screws and Nuts

22 1/2° Angle—Single Head

Drop Forged—Selected Steel



HI-TEN Square Box Wrenches are drop forged from selected steel, are accurately broached smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

In stock with openings listed. For wrenches with special openings see page 103.

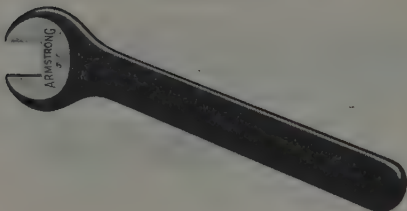
No.	Nominal Opening	For Set Screw; Size	For Square Head Cap Screw; Dia. Screw	For Amer. Std. REG. Sq. Nut; Size Bolt	Extreme Length, Approx.	HEAD		LIST PRICE Each Finished	No.
						Thick-ness	Outside Diameter		
581	1/4	1/4			3 3/8	9/32	21/32	\$0.34	581
582	5/16	5/16			3 3/4	5/16	11/16	.40	582
583	3/8	3/8	1/4		4 1/4	11/32	7/8	.48	583
584	7/16	7/16	5/16	1/4	4 7/8	3/8	1	.56	584
585	1/2	1/2	3/8		5 1/2	7/16	1 1/8	.68	585
586	9/16	9/16	7/16	5/16	6 1/4	1/2	1 3/16	.82	586
587	5/8	5/8	1/2	3/8	7	9/16	1 5/16	1.00	587
588	3/4	3/4	5/8	7/16	8	5/8	1 9/16	1.24	588
589	7/8	7/8	3/4	9/16	9	21/32	1 3/4	1.62	589
590	1	1		5/8	10	3/4	2	2.10	590
591	1 1/8	1 1/8		3/4	11	13/16	2 1/4	2.70	591



ARMSTRONG HI-TEN WRENCHES

SET SCREW PATTERN

For Set Screws, Square Cap Screws and Nuts
22 1/2° Angle, Single Head
Drop Forged—Selected Steel



HI-TEN Set Screw Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal size of opening.

In stock with openings listed. For wrenches with special openings see page 103.

All openings are slightly larger than nominal sizes listed to allow for proper clearance.

No.	Nominal Opening	For Set Screw; Size	For Square Head Cap Screw; Dia. Screw	For Amer. Std. REGULAR Square Nut; Size Bolt	Extreme Length, Approx.	Thiokness Head	LIST PRICE Each Finished	No.
500	3/16	3/16			3	3/16	\$0.28	500
501	1/4	1/4			3 5/8	1/4	.34	501
502	5/16	5/16			4 1/2	9/32	.42	502
503	3/8	3/8	1/4		5 3/8	11/32	.50	503
504	7/16	7/16	5/16	1/4	6 1/4	3/8	.62	504
505	1/2	1/2	3/8		7	7/16	.76	505
506	9/16	9/16	7/16	5/16	7 1/2	1/2	.92	506
507	5/8	5/8	1/2	3/8	8	9/16	1.10	507
508	3/4	3/4	5/8	7/16	9 1/4	5/8	1.36	508
509	7/8	7/8	3/4	9/16	10 1/2	11/16	1.68	509
510	1	1		5/8	11 1/2	3/4	2.20	510
511	1 1/8	1 1/8	7/8	3/4	12	13/16	2.80	511



ARMSTRONG HI-TEN WRENCHES

SET SCREW PATTERN

For Set Screws, Square Head Screws and Nuts
 22 1/2° Angle, Double Head
 Drop Forged—Selected Steel



HI-TEN Set Screw Wrenches are drop forged from selected steel, are accurately milled, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal sizes of openings.

In stock with openings listed. For wrenches with special openings see page 103.

All openings are slightly larger than nominal sizes listed to allow for proper clearance.

No.	Nominal Opening	For Set Screws; Size	For Square Head Cap Screws; Dia. Screws	For Amer. Std. REGULAR Square Nuts; Size Bolts	Extreme Length, Approx.	Thick-ness Head	LIST PRICE Each, Fin-ished	No.
525	1/4 & 5/16	1/4 & 5/16			4	1/4	\$0.48	525
527	5/16 & 3/8	5/16 & 3/8	1/4		5	5/16	.58	527
529	3/8 & 7/16	3/8 & 7/16	1/4 & 5/16	1/4	5 7/8	11/32	.70	529
531	7/16 & 1/2	7/16 & 1/2	5/16 & 3/8	1/4	6 5/8	3/8	.90	531
533	1/2 & 9/16	1/2 & 9/16	3/8 & 7/16	5/16	7 1/2	1/2	1.08	533
535	9/16 & 5/8	9/16 & 5/8	7/16 & 1/2	5/16 & 3/8	8 3/8	9/16	1.30	535
537	5/8 & 3/4	5/8 & 3/4	1/2 & 5/8	3/8 & 7/16	10	5/8	1.60	537
539	3/4 & 7/8	3/4 & 7/8	5/8 & 3/4	7/16 & 9/16	11 3/8	11/16	2.00	539
541	7/8 & 1	7/8 & 1	3/4	9/16 & 5/8	12 5/8	3/4	2.60	541
543	1 & 1 1/8	1 & 1 1/8	7/8	5/8 & 3/4	14	13/16	3.50	543

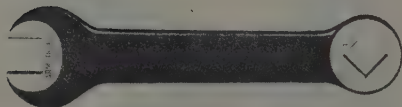


ARMSTRONG HI-TEN WRENCHES

DOUBLE HEAD TOOL POST PATTERN

For Set Screws

Drop Forged—Selected Steel



HI-TEN Double Head Tool Post Wrenches are drop forged from selected steel, are accurately milled and broached, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal sizes of openings.

In stock with openings listed. For wrenches with special openings see page 103.

All openings are slightly larger than nominal sizes listed to allow for proper clearance.

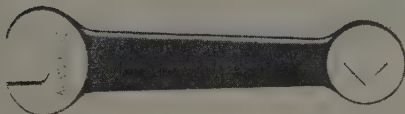
No.	Open End For Set Screw; Size	Closed End For Set Screw; Size	Extreme Length, Approx.	Thickness Heads	LIST PRICE Each, Finished	No.
554	7/16	7/16	5 1/2	15/32	\$1.12	554
555	1/2	1/2	6	17/32	1.24	555
555-B	9/16	1/2	6	17/32	1.24	555-B
555-C	9/16	9/16	6	17/32	1.24	555-C
556	5/8	5/8	6 3/4	9/16	1.44	556
556-B	11/16	5/8	6 3/4	9/16	1.44	556-B
556-C	11/16	11/16	6 3/4	9/16	1.44	556-C
557	3/4	3/4	7 1/2	11/16	1.64	557



ARMSTRONG HI-TEN WRENCHES

DOUBLE HEAD TOOL POST PATTERN

For Nuts and Set Screws
Drop Forged—Selected Steel



HI-TEN Double Head Tool Post Wrenches are drop forged from selected steel, are accurately milled and broached, smoothly burnished, carefully hardened and attractively finished in baked-on enamel. The wrench heads are ground bright and plainly stamped with catalog number and nominal sizes of openings.

In stock with openings listed. For wrenches with special openings see page 103.

All openings are slightly larger than nominal sizes listed to allow for proper clearance.

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Closed End For Set Screw; Size	Extreme Length Approx.	Thickness Heads	LIST PRICE Each Finished	No.
562-B	5/8		3/8	9/16	6 1/2	7/16	\$1.32	562-B
562	11/16	3/8		9/16	6 1/2	7/16	1.32	562
563-E	13/16		1/2	7/16	7	1/2	1.44	563-E
563-F	13/16		1/2	1/2	7	1/2	1.44	563-F
563-G	13/16		1/2	9/16	7	1/2	1.44	563-G
563-H	13/16		1/2	5/8	7	1/2	1.44	563-H
563	7/8	1/2	9/16	7/16	7	1/2	1.44	563
563-B	7/8	1/2	9/16	1/2	7	1/2	1.44	563-B
563-C	7/8	1/2	9/16	9/16	7	1/2	1.44	563-C
563-D	7/8	1/2	9/16	5/8	7	1/2	1.44	563-D
564-C	1		5/8	5/8	7	5/8	1.44	564-C
564	1 1/16	5/8		5/8	8	5/8	1.94	564
565-C	1		5/8	3/4	8	5/8	1.94	565-C
565	1 1/16	5/8		3/4	8	5/8	1.94	565
566-C	1 1/8		3/4	3/4	9	11/16	2.40	566-C
566-D	1 1/8		3/4	7/8	9	11/16	2.40	566-D
566	1 1/4	3/4		3/4	9	11/16	2.40	566
566-B	1 1/4	3/4		7/8	9	11/16	2.40	566-B
567-D	1 1/8		3/4	1	10	3/4	3.20	567-D
567	1 1/4	3/4		1	10	3/4	3.20	567
567-E	1 5/16		7/8	7/8	10	3/4	3.20	567-E
567-F	1 5/16		7/8	1	10	3/4	3.20	567-F
567-B	1 7/16	7/8		7/8	10	3/4	3.20	567-B
567-C	1 7/16	7/8		1	10	3/4	3.20	567-C
568-E	1 1/2		1	7/8	11	13/16	4.40	568-E
568-F	1 1/2		1	1	11	13/16	4.40	568-F
568	1 5/8	1		7/8	11	13/16	4.40	568
568-B	1 5/8	1		1	11	13/16	4.40	568-B
568-G	1 11/16		1 1/8	1	11	13/16	4.40	568-G
568-H	1 7/8		1 1/4	1	11	13/16	4.40	568-H
568-C	1 13/16	1 1/8		1	11	13/16	4.40	568-C
568-D	2	1 1/4		1	11	13/16	4.40	568-D



ARMSTRONG HI-TEN WRENCHES

CONSTRUCTION PATTERN

15° Angle

Drop Forged—Selected Steel



HI-TEN Construction Wrenches are drop forged from selected steel, are accurately milled, carefully hardened throughout and grit-blasted. The wrench heads are not ground bright but are plainly stamped with catalog number and nominal size of opening.

The deep and narrow jaws of these wrenches provide for a secure bearing on the nut. The handles are extra long and tapered for ease in lining up bolt holes.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth wrenches see page 184.

On special order these wrenches can be furnished bent to 45° or 90° angle at an additional charge; see 90° cut at right.



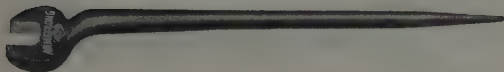
No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length Approx.	Thickness Head	LIST PRICE Each, Hardened	No.
201-A	7/16		1/4	9 1/2	3/8	\$0.75	201-A
201	1/2	1/4		9 1/2	3/8	.75	201
201-B	9/16		5/16	9 1/2	3/8	.75	201-B
202	19/32	5/16		9 1/2	3/8	.75	202
203-A	5/8		3/8	12	7/16	.95	203-A
203	11/16	3/8		12	7/16	.95	203
204-A	3/4		7/16	12	7/16	.95	204-A
204	25/32	7/16		12	7/16	.95	204
205-A	13/16		1/2	14 1/2	9/16	1.20	205-A
205	7/8	1/2	9/16	14 1/2	9/16	1.20	205
206	31/32	9/16		14 1/2	9/16	1.20	206
206-B	1		5/8	14 1/2	9/16	1.20	206-B
207	1 1/16	5/8		17	11/16	1.55	207
207-A	1 1/8		3/4	17	11/16	1.55	207-A
208	1 1/4	3/4		17	11/16	2.05	208
208-A	1 5/16		7/8	17	11/16	2.05	208-A
209	1 7/16	7/8		21	3/4	2.70	209
209-A	1 1/2		1	21	3/4	2.70	209-A
210	1 5/8	1		23	7/8	3.60	210
210-A	1 11/16		1 1/8	23	7/8	3.60	210-A
211	1 13/16	1 1/8		21	1	5.30	211
211-A	1 7/8		1 1/4	21	1	5.30	211-A
212	2	1 1/4		21	1	5.30	212



ARMSTRONG HI-TEN WRENCHES

STRUCTURAL PATTERN

Straight Opening
Drop Forged—Selected Steel



HI-TEN Structural Wrenches are drop forged from selected steel, are accurately milled, carefully hardened throughout and grit-blasted. The wrench heads are not ground bright but are plainly stamped with catalog number and nominal size of opening.

The deep and narrow jaws of these wrenches provide for a secure bearing on the nut. The offset head allows the wrench handle to clear obstructions and enables the user to keep the wrench squarely on the nut at all times. The handles are extra long and tapered for ease in lining up bolt holes.

In stock with openings listed. For wrenches with special openings see page 103. For Whitworth wrenches see page 184.

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	Thickness Head	Handle Offset at Head	LIST PRICE Each, Hardened	No.
901-A	7/16		1/4	9 1/2	11/32	13/16	\$0.80	901-A
901	1/2	1/4		9 1/2	11/32	13/16	.80	901
901-B	9/16		5/16	9 1 2	11/32	13/16	.80	901-B
902	19/32	5/16		9 1 2	11/32	13/16	.80	902
903-A	5/8		3/8	12	7/16	15/16	1.05	903-A
903	11/16	3/8		12	7/16	15/16	1.05	903
904-A	3/4		7/16	12	7/16	15/16	1.05	904-A
904	25/32	7/16		12	7/16	15/16	1.05	904
905-A	13/16		1/2	14 1 2	17/32	1	1.40	905-A
905	7/8	1/2	9/16	14 1/2	17/32	1	1.40	905
906	31/32	9/16		14 1/2	17/32	1	1.40	906
906-B	1		5/8	14 1 2	17/32	1	1.40	906-B
907	1 1/16	5/8		17	5/8	1 1/8	1.85	907
907-A	1 1/8		3/4	17	5/8	1 1/8	1.85	907-A
908	1 1/4	3/4		19	11/16	1 1/4	2.35	908
908-A	1 5/16		7/8	19	11/16	1 1/4	2.35	908-A
909	1 7/16	7/8		21	3/4	1 5/16	3.00	909
909-A	1 1/2		1	21	3/4	1 5/16	3.00	909-A
910	1 5/8	1		23	13/16	1 3/8	4.10	910
910-A	1 11/16		1 1/8	23	13/16	1 3/8	4.10	910-A
911	1 13/16	1 1/8		21	7/8	1 1/2	6.15	911
911-A	1 7/8		1 1/4	21	7/8	1 1/2	6.15	911-A
912	2	1 1/4		21	7/8	1 1/2	6.15	912



ARMSTRONG HI-TEN WRENCHES

FACE SPANNER PATTERN

Drop Forged—Selected Steel



HI-TEN Pin Spanners are drop forged from selected steel, are smoothly burnished, carefully hardened throughout and attractively finished in baked-on enamel. The pins are forged integral with the wrench and are milled to exact sizes listed.

In stock with pin sizes listed. For wrenches with special openings, see page 103.

No.	PINS			Span of Jaws in Clear	Approx. Length from Center of Pins	LIST PRICE Each Finished	No.
	Distance C to C	Diameter Milled	Length				
418	1	3/16	3/16	11/16	4 1/2	\$0.60	418
420	1 1/4	7/32	7/32	7/8	5	.66	420
422	1 1/2	7/32	7/32	1 1/8	5 1/2	.74	422
424	1 3/4	7/32	7/32	1 3/8	6	.84	424
426	2	1/4	1/4	1 19/32	6 1/2	.96	426
428	2 1/4	1/4	1/4	1 27/32	7	1.10	428
430	2 1/2	9/32	9/32	2 1/32	7 1/2	1.28	430
432	2 3/4	9/32	9/32	2 9/32	8	1.48	432
434	3	5/16	5/16	2 1/2	8 1/2	1.70	434
436	3 1/4	5/16	5/16	2 3/4	9 1/8	1.94	436
438	3 1/2	5/16	5/16	3	9 3/4	2.20	438
440	3 3/4	3/8	3/8	3 3/16	10 3/8	2.50	440
442	4	3/8	3/8	3 7/16	11	2.90	442

ADJUSTABLE FACE SPANNER PATTERN

Drop Forged—Selected Steel

HI-TEN Adjustable Face Spanners are drop forged from selected steel, have pins milled, smooth surfaces, hardened, and finished in baked-on enamel.



No.	Extreme Capacity	Extreme Length Approx.	Diameter of Pins	LIST PRICE Each Finished	No.
482	2	6 3/8	3/16	\$1.50	482
483	3	8 1/4	1/4	2.20	483
484	4	10 3/8	5/16	3.20	484



ARMSTRONG HI-TEN WRENCHES

PIN SPANNER PATTERN

Drop Forged—Selected Steel

HI-TEN Pin Spanners are drop forged from selected steel, are smoothly burnished, carefully hardened throughout and attractively finished in baked-on enamel. The pins are forged integral with the wrench and are milled to exact sizes listed.



In stock with pin sizes listed. For wrenches with special openings see page 103.

No.	For Circle Diameter	Finished Diameter Pin	Extreme Length, Approx.	LIST PRICE Each, Finished	No.
452	1	3/16	4	\$0.54	452
453	1 1/4	13/64	4 1/2	.58	453
454	1 1/2	7/32	5	.60	454
455	1 3/4	15/64	5 1/2	.62	455
456	2	1/4	6	.66	456
457	2 1/4	17/64	6 1/2	.70	457
458	2 1/2	9/32	7	.72	458
459	2 3/4	19/64	7 1/2	.78	459
460	3	5/16	8	.84	460
461	3 1/4	21/64	8 1/2	.90	461
462	3 1/2	11/32	9	.96	462
463	3 3/4	23/64	9 1/2	1.02	463
464	4	3/8	10	1.08	464
466	5	7/16	12	1.44	466
468	6	1/2	14	1.96	468

ADJUSTABLE HOOK SPANNER PATTERN

Drop Forged—Selected Steel



HI-TEN Hook Spanners are drop forged from selected steel, smoothly burnished and attractively finished in baked-on enamel; the jaw is hardened.

HI-TEN Hook Spanners will service many sizes of adjusting collars, rings and spindle bearings.

Set No. 401

LIST PRICE \$9.45

Complete in
Cardboard box

Contains 1 Each,

No's. 471, 472, 474 and
474-A as listed below.

No.	Capacity for Circles, Diameter	Extreme Length, Approx.	Thickness		Depth Hook	LIST PRICE Each Finished	No.
			Handle	Hook			
471	3/4 to 2	6 3/8	1/4	11/32	1/8	\$1.75	471
472	1 1/4 to 3	8 1/8	9/32	13/32	5/32	2.00	472
474	2 to 4 3/4	11 3/8	5/16	15/32	3/16	2.75	474
474-A	4 1/2 to 6 1/4	12 1/8	5/16	15/32	1/4	2.95	474-A



ARMSTRONG HI-TEN WRENCHES

SOCKET PATTERN

Straight Shank—
With Removable Pin Handle

Drop Forged—Selected Steel



Hexagon Openings

HI-TEN Socket Wrenches are drop forged from selected steel, are accurately broached, smoothly burnished, carefully hardened and attractively finished in baked-on enamel; face bright. The pin handle is removable, allowing the use of another wrench on the hexagon end of the shank.

In stock with openings listed. On special orders, Socket Wrenches longer or shorter than standard lengths can be furnished. For Whitworth wrenches see page 184.

HEXAGON OPENINGS						Diam. of Head	Extreme Length, Approx.	LIST PRICE Each, Finished	No.
No.	Nominal Opening Across Flats	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Cap Screw Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt				
961-A	5/16	1/8				1/2	4 1/4	\$.80	961-A
962-D	3/8		3/16			5/8	4 1/2	.88	962-D
963-A	13/32	3/16				11/16	4 7/8	.98	963-A
963-D	7/16		1/4	1/4	1/4	11/16	4 7/8	.98	963-D
964-A	1/2	1/4	5/16	5/16		3/4	5 1/4	1.04	964-A
965-D	9/16		3/8	3/8	5/16	7/8	5 3/4	1.16	965-D
965-A	19/32	5/16				7/8	5 3/4	1.16	965-A
966-D	5/8		7/16	7/16	3/8	1	6 1/8	1.26	966-D
967-A	11/16	3/8				1 1/8	6 1/2	1.42	967-A
967-D	3/4		1/2	1/2	7/16	1 1/8	6 1/2	1.42	967-D
968-A	25/32	7/16				1 1/4	7	1.54	968-A
968-D	13/16		9/16		1/2	1 1/4	7	1.54	968-D
969-A	7/8	1/2	5/8	9/16	9/16	1 3/8	7 3/8	1.74	969-A
970-S	15/16			5/8		1 1/2	7 7/8	1.96	970-S
970-D	1		3/4		5/8	1 1/2	7 7/8	1.96	970-D
971-A	1 1/16	5/8		3/4		1 5/8	8 1/4	2.20	971-A
971-D	1 1/8		7/8		3/4	1 5/8	8 1/4	2.20	971-D
973-A	1 1/4	3/4		7/8		1 7/8	9 1/8	3.00	973-A
973-B	1 5/16		1		7/8	1 7/8	9 1/8	3.00	973-B
975-A	1 7/16	7/8		1		2 1/8	10	3.70	975-A
975-D	1 1/2		1 1/8		1	2 1/8	10	3.70	975-D
976-A	1 5/8	1		1 1/8		2 3/8	10 3/8	4.24	976-A
976-B	1 11/16		1 1/4		1 1/8	2 3/8	10 3/8	4.24	976-B
977-A	1 13/16	1 1/8		1 1/4		2 5/8	10 7/8	4.80	977-A
978-A	2	1 1/4		1 3/8		2 7/8	11 3/8	5.70	978-A



ARMSTRONG HI-TEN WRENCHES

SOCKET PATTERN

**Straight Shank—
With Removable Pin Handle**

Drop Forged—Selected Steel

Square Openings



HI-TEN Socket Wrenches are drop forged from selected steel, are accurately broached smoothly burnished, carefully hardened and attractively finished in baked-on enamel, fac bright. The pin handle is removable, allowing the use of another wrench on the hexagon end of the shank.

In stock with openings listed. On special orders, Socket Wrenches longer or shorter than standard lengths can be furnished.

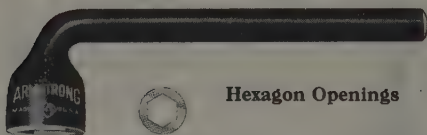
No.	SQUARE OPENINGS					Diameter of Head	Extreme Length, Approx.	LIST PRICE Each Finished	No.
	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Square Head Cap Screw; Dia. Screw	For Set Screw; Size	For Amer. Std. REGULAR Nut; Size Bolt				
961-H	3/16			3/16		1/2	4 1/4	\$0.80	961-H
961-J	1/4			1/4		1/2	4 1/4	.80	961-J
962-H	5/16			5/16		5/8	4 1/2	.88	962-H
963-H	3/8		1/4	3/8		11/16	4 7/8	.98	963-H
965-H	7/16		5/16	7/16	1/4	7/8	5 3/4	1.16	965-H
966-H	1/2	1/4	3/8	1/2		1	6 1/8	1.26	966-H
967-H	9/16		7/16	9/16	5/16	1 1/8	6 1/2	1.42	967-H
968-H	5/8		1/2	5/8	3/8	1 1/4	7	1.54	968-H
968-P	11/16	3/8	9/16			1 1/4	7	1.54	968-P
969-H	3/4		5/8	3/4	7/16	1 3/8	7 3/8	1.74	969-H
971-H	7/8	1/2	3/4	7/8	9/16	1 5/8	8 1/4	2.20	971-H
973-H	1			1	5/8	1 7/8	9 1/8	3.00	973-H
974-H	1 1/8		7/8	1 1/8	3/4	2	9 1/2	3.40	974-H
976-H	1 1/4	3/4	1	1 1/4		2 3/8	10 3/8	4.24	976-H
977-X	1 7/16	7/8				2 5/8	10 7/8	4.80	977-X
977-P	1 1/2		1 1/4	1 1/2	1	2 5/8	10 7/8	4.80	977-P



ARMSTRONG HI-TEN WRENCHES

OFFSET SOCKET PATTERN

Drop Forged—Selected Steel



Hexagon Openings

HI-TEN Socket Wrenches are drop forged from selected steel, are accurately broached, smoothly burnished and attractively finished in baked-on enamel; face bright.

In stock with openings listed. On special order, Socket Wrenches with extra length at handle or offset can be furnished. For Whitworth wrenches see page 184.

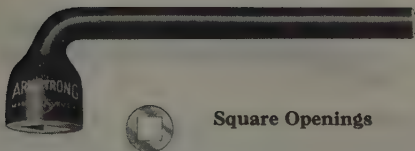
No.	HEXAGON OPENINGS					Diam. of Head	Extreme Length Approx.	Handle Offset in Clear from Face of Wrench	LIST PRICE Each Finished	No.
	Nominal Opening Across Flats	For American Standard HEAVY Nut (USS); Size Bolt	For American Standard Cap Screw; Dia. Screw	For American Standard LIGHT Nut (SAE); Size Bolt	For American Standard REGU-LAR Nut; Size Bolt					
261-A	5/16	1/8				1/2	3 3/4	13/16	\$0.60	261-A
262-D	3/8		3/16			5/8	4 1/2	1	.66	262-D
263-A	13/32	3/16				5/8	4 1/2	1 1/16	.72	263-A
263-D	7/16		1/4	1/4	1/4	11/16	4 1/2	1 1/16	.72	263-D
264-A	1/2	1/4	5/16	5/16		3/4	5 1/2	1 1/4	.78	264-A
265-D	9/16		3/8	3/8	5/16	7/8	6 1/2	1 7/16	.88	265-D
265-A	19/32	5/16				7/8	6 1/2	1 7/16	.88	265-A
266-D	5/8		7/16	7/16	3/8	1	6 1/2	1 9/16	.96	266-D
267-A	11/16	3/8				1 1/8	7 1/4	1 5/8	1.08	267-A
267-D	3/4		1/2	1/2	7/16	1 1/8	7 1/4	1 5/8	1.08	267-D
268-A	25/32	7/16				1 1/4	8	1 13/16	1.20	268-A
268-D	13/16		9/16		1/2	1 1/4	8	1 13/16	1.20	268-D
269-A	7/8	1/2	5/8	9/16	9/16	1 3/8	8 3/8	2	1.38	269-A
270-S	15/16			5/8		1 1/2	9 1/8	2 3/16	1.56	270-S
270-D	1		3/4		5/8	1 1/2	9 1/8	2 3/16	1.56	270-D
271-A	1 1/16	5/8		3/4		1 5/8	10	2 3/8	1.80	271-A
271-D	1 1/8		7/8		3/4	1 5/8	10	2 3/8	1.80	271-D
273-A	1 1/4	3/4		7/8		1 7/8	11 5/8	2 3/4	2.40	273-A
273-B	1 5/16		1		7/8	1 7/8	11 5/8	2 3/4	2.40	273-B
275-A	1 7/16	7/8		1		2 1/8	13 1/4	3 1/8	3.00	275-A
275-D	1 1/2		1 1/8		1	2 1/8	13 1/4	3 1/8	3.00	275-D
276-A	1 5/8	1		1 1/8		2 3/8	14 7/8	3 1/2	3.44	276-A
276-B	1 11/16		1 1/4		1 1/8	2 3/8	14 7/8	3 1/2	3.44	276-B
277-A	1 13/16	1 1/8		1 1/4		2 5/8	16 1/2	3 7/8	3.90	277-A
278-A	2	1 1/4		1 3/8		2 7/8	18 1/4	4 3/8	4.80	278-A



ARMSTRONG HI-TEN WRENCHES

OFFSET SOCKET PATTERN

Drop Forged—Selected Steel



Square Openings

HI-TEN Socket Wrenches are drop forged from selected steel, are accurately broached smoothly burnished and attractively finished in baked-on enamel; face bright.

In stock with openings listed. On special order, Socket Wrenches with extra length at hand or offset can be furnished.

No.	SQUARE OPENINGS					Diam. of Head	Extreme Length, Approx.	Handle Offset in Clear from Face of Wrench	LIST PRICE Each Finished	No.
	Nominal Opening	For American Standard HEAVY Nut (USS); Size Bolt	For Square Head Cap Screw; Dia. Screw	For Set Screw; Size Screw	For American Standard REGU- LAR Nut; Size Bolt					
261-J	1/4			1/4		1/2	3 3/4	13/16	\$.60	261-J
262-H	5/16			5/16		5/8	4 1/2	1	.66	262-H
263-H	3/8		1/4	3/8		11/16	5 1/2	1 1/16	.72	263-H
265-H	7/16		5/16	7/16	1/4	7/8	6 1/2	1 7/16	.88	265-H
266-H	1/2	1/4	3/8	1/2		1	6 1/2	1 9/16	.96	266-H
267-H	9/16		7/16	9/16	5/16	1 1/8	7 1/4	1 5/8	1.08	267-H
268-H	5/8		1/2	5/8	3/8	1 1/4	8	1 13/16	1.20	268-H
268-P	11/16	3/8	9/16			1 1/4	8	1 13/16	1.20	268-P
269-H	3/4		5/8	3/4	7/16	1 3/8	8 3/8	2	1.38	269-H
271-H	7/8	1/2	3/4	7/8	9/16	1 5/8	10	2 3/8	1.80	271-H
273-H	1			1	5/8	1 7/8	11 5/8	2 3/4	2.40	273-H
274-H	1 1/8		7/8	1 1/8	3/4	2	12 3/8	2 7/8	2.70	274-H
276-H	1 1/4	3/4	1	1 1/4		2 3/8	14 7/8	3 1/2	3.44	276-H



ARMSTRONG HI-TEN WRENCHES

ALLIGATOR TYPE

Single End
Drop Forged—Selected Steel



HI-TEN Alligator Wrenches are drop forged from selected steel and tempered in oil. The teeth are carefully milled and are of uniform design and of superior material and workmanship.

No.	Extreme Length, Approx.	Holds Pipe, Inches	Holds Round Iron, Inches	LIST PRICE, Each	No.
2 1/2	12	3/8 to 1	5/8 to 1 1/4	\$ 1.85	2 1/2
3	15	1/2 to 1 1/4	3/4 to 1 1/2	2.80	3
3 1/2	18	3/4 to 1 1/2	1 to 1 3/4	3.70	3 1/2
4	21	1 to 2	1 1/4 to 2 1/2	5.60	4
4 1/2	24	1 1/4 to 2 1/2	1 1/2 to 3	8.50	4 1/2
5	27	1 1/2 to 3	2 1/4 to 3 1/2	11.00	5

ARMSTRONG HI-TEN WRENCHES

EXTRA LONG PATTERN

With Extra Long Round Handle.
Straight Opening—Single Head
Drop Forged—Selected Steel



HI-TEN Extra Long Wrenches are drop forged from selected steel, accurately milled, carefully hardened throughout and grit-blasted. Head is not ground bright but is plainly stamped with catalog number and nominal size of opening.

No.	Nominal Openings Milled	For Amer. Std. HEAVY Nut (USS); Size Belt	Extreme Length, Approx.	LIST PRICE Each	No.
292	7/8	1/2	19	\$3.00	292
293	1 1/16	5/8	22	3.20	293
294	1 1/4	3/4	22	3.20	294
296	1 7/16	7/8	24	4.20	296
297	1 5/8	1	24	4.20	297



ARMSTRONG ARMALLOY WRENCHES

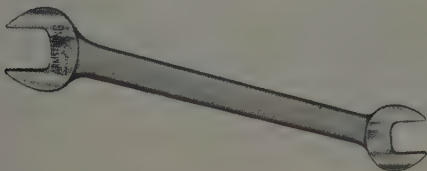
DROP FORGED - SUPER QUALITY

Selected Grade Alloy Steel

LONGER—STRONGER—LIGHTER—THINNER

Beautiful Finish, Better Balance

For maximum strength, minimum weight and superlative finish, ARMSTRONG ARMALLOY Wrenches are preferred by discriminating buyers and wrench users in every industry. These Super Quality Wrenches are extra long and light as compared to their capacity. Their strength is not based on bulk, but upon excellence of design and material. The jaws are thin and narrow and can get at the nut that is placed in close quarters.



FINISHED WRENCHES are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

WRENCHES WITH SPECIAL OPENINGS—In lots of 100 or more of any size for which we have the necessary tools, wrenches as listed, can be furnished with special openings at no extra charge.

SPECIAL PATTERN WRENCHES—In addition to the standard patterns listed, we are also prepared to furnish practically any special wrench in reasonable quantities. Send your specifications for quotation.

WHEN ORDERING wrenches be careful to specify catalog numbers and nominal size of openings as listed.



ARMSTRONG ARMALLOY WRENCHES

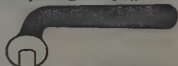
ENGINEERS' PATTERN

15° Angle—Single Head
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Engineers' Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance. In stock with openings listed. For wrenches with special openings see page 129.

On special order these wrenches can be furnished bent to 45° or 90° angle at an additional charge. An illustration of such a wrench bent to 90° angle is shown at right.



No.	Nominal Openings	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	Thick- ness Heads	LIST PRICE Each	No.
1000	5/16	1/8	1/8			4	1/4	\$.47	1000
1700	3/8		3/16			4	1/4	.47	1700
1000-A	13/32	3/16				4	1/4	.47	1000-A
1701	7/16		1/4	1/4	1/4	4 1/2	5/16	.56	1701
1001	1/2	1/4	5/16	5/16		4 1/2	5/16	.56	1001
1702	9/16		3/8	3/8	5/16	5 3/8	11/32	.70	1702
1002	19/32	5/16				5 3/8	11/32	.70	1002
1703	5/8		7/16	7/16	3/8	6 3/8	3/8	.85	1703
1003	11/16	3/8				6 3/8	3/8	.85	1003
1704	3/4		1/2	1/2	7/16	7 1/4	3/8	1.05	1704
1004	25/32	7/16				7 1/4	3/8	1.05	1004
1705	13/16		9/16		1/2	8 1/4	7/16	1.25	1705
1005	7/8	1/2	5/8	9/16	9/16	8 1/4	7/16	1.25	1005
1006-A	15/16			5/8		9	1/2	1.50	1006-A
1006	31/32	9/16				9	1/2	1.50	1006
1706	1		3/4	11/16	5/8	9	1/2	1.50	1706
1007	1 1/16	5/8		3/4		10 1/2	9/16	1.88	1007
1707	1 1/8		7/8		3/4	10 1/2	9/16	1.88	1707
1008	1 1/4	3/4		7/8		11 3/4	5/8	2.50	1008
1008-A	1 5/16		1		7/8	11 3/4	5/8	2.50	1008-A
1009	1 7/16	7/8		1		13 1/2	3/4	3.80	1009
1709	1 1/2		1 1/8		1	13 1/2	3/4	3.80	1709
1010	1 5/8	1		1 1/8		15 1/4	13/16	5.30	1010
1010-A	1 11/16		1 1/4		1 1/8	15 1/4	13/16	5.30	1010-A
1011	1 13/16	1 1/8		1 1/4		17	7/8	6.90	1011
1011-A	1 7/8				1 1/4	17	7/8	6.90	1011-A
1012	2	1 1/4		1 3/8		19	15/16	9.40	1012
1012-A	2 1/16			1 1/2	1 3/8	19	15/16	9.40	1012-A
1013	2 3/16	1 3/8				21	1 1/16	12.15	1013
1013-A	2 1/4				1 1/2	21	1 1/16	12.15	1013-A
1014	2 3/8	1 1/2				23	1 1/8	15.30	1014
1014-A	2 7/16				1 5/8	23	1 1/8	15.30	1014-A



ARMSTRONG ARMALLOY WRENCHES

ENGINEERS' PATTERN

15° Angle, Double Head
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Engineers' Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

In stock with openings listed. For wrenches with special openings see page 129. For Whitworth and Metric wrenches see page 184.

No.	Nominal Openings	For Amer. Std. HEAVY Nuts (USS); Size Bolts	For Amer. Std. Hex Head- Cap Screws; Dia. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Ex- treme Length Appr.	Thick- ness Heads	LIST PRICE Each
*1021-S	1/4 & 5/16	1/8	1/8		**4, 5 & 6	4 1/2	5/32	\$0.58
1720	5/16 & 11/32	1/8	1/8		** (No. 8)	4 1/2	5/32	.58
1721	5/16 & 3/8	1/8	1/8 & 3/16			4 1/2	13/64	.58
1723	3/8 & 7/16		3/16 & 1/4	1/4	1/4	4 7/8	13/64	.58
1725	7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	5 5/8	1/4	.82
1725-A	7/16 & 9/16		1/4 & 3/8	1/4 & 3/8	1/4 & 5/16	5 5/8	1/4	.82
1725-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	6 1/8	1/4	.82
1025	1/2 & 19/32	1/4 & 5/16	5/16	5/16		6 1/8	1/4	.82
1727	9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	6 5/8	9/32	1.00
1027	19/32 & 11/16	5/16 & 3/8				7 1/4	9/32	1.00
1027-B	5/8 & 11/16	3/8	7/16	7/16	3/8	7 1/4	9/32	1.00
1028	19/32 & 25/32	5/16 & 7/16				7 7/8	5/16	1.24
1729	5/8 & 3/4		7/16 & 1/2	7/16 & 1/2	3/8 & 7/16	7 7/8	5/16	1.24
1029-B	11/16 & 3/4	3/8	1/2	1/2	7/16	8 1/2	5/16	1.24
1029	11/16 & 25/32	3/8 & 7/16				8 1/2	5/16	1.24
1029-C	11/16 & 13/16	3/8				8 1/2	5/16	1.24
1731	3/4 & 13/16		1/2 & 9/16	1/2	1/2	9 1/4	3/8	1.65
1731-A	3/4 & 7/8	1/2	1/2 & 5/8	1/2 & 9/16	7/16 & 1/2	9 1/4	3/8	1.65
1031-B	25/32 & 13/16	7/16	9/16		7/16 & 9/16	9 1/4	3/8	1.65
1031	25/32 & 7/8	7/16 & 1/2	5/8	9/16	1/2	9 1/4	3/8	1.65
1731-B	13/16 & 7/8	1/2	9/16 & 5/8	9/16	9/16	9 1/4	3/8	1.65
1032-B	13/16 & 15/16		9/16	5/8	1/2	9 1/4	3/8	1.65
1033-A	7/8 & 15/16	1/2	5/8	9/16 & 5/8	9/16	10	3/8	1.65
1733	7/8 & 1	1/2	5/8 & 3/4	9/16 & 11/16	9/16 & 5/8	10 7/8	7/16	2.25
1033-C	15/16 & 1		3/4	5/8 & 11/16	5/8	10 7/8	7/16	2.25
1034	7/8 & 1 1/16	1/2 & 5/8	5/8	9/16 & 3/4	9/16	11 3/4	7/16	2.25
1034-A	15/16 & 1 1/16	5/8		5/8 & 3/4		11 3/4	7/16	2.25
1735	1 & 1 1/8		3/4 & 7/8	11/16	5/8 & 3/4	12 3/4	1/2	3.15
1036-B	1 1/16 & 1 1/8	5/8	7/8	3/4	3/4	12 3/4	1/2	3.15
1037	1 1/16 & 1 1/4	5/8 & 3/4		3/4 & 7/8		12 3/4	1/2	3.15
1737	1 1/8 & 1 1/4	3/4	7/8	3/4 & 7/8	3/4	12 3/4	1/2	3.15
1037-A	1 1/8 & 1 5/16		7/8 & 1		3/4 & 7/8	12 3/4	1/2	3.15
1039-B	1 1/4 & 1 5/16	3/4	1	7/8	7/8	14	9/16	4.90
1039	1 1/4 & 1 7/16	3/4 & 7/8		7/8 & 1		14	9/16	4.90
†1039-A	1 5/16 & 1 1/2		1 & 11/8		7/8 & 1	14	9/16	4.90
1039-C	1 3/8 & 1 7/16	7/8		1		14	9/16	4.90
1041	1 7/16 & 1 5/8	7/8 & 1		1 & 1 1/8		15 3/4	13/16	8.80
1041-B	1 1/2 & 1 5/8	1	1 1/8	1 1/8	1	15 3/4	13/16	8.80

*—Old No. 1020. †—Old No. 1739-C. **—Amer. Std. Mach. Screw & Stove Bolt Nuts.

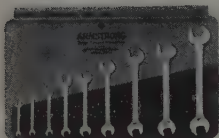


ARMSTRONG ARMALLOY ENGINEERS' WRENCH SETS

15° Angle, Double Head

Drop Forged—Selected Grade Alloy Steel

ARMALLOY Engineers' Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and finished in Chrome-plate with heads buffed bright. Wrenches are plainly stamped with catalog number and nominal size of opening. All openings are slightly larger than nominal sizes listed to allow for proper clearance.



Set No. 9A-38R

Nine Wrenches with openings 3/8" to 1 5/8".
No duplications.

Fits the following 38 sizes of bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1

Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1

Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1, 1 1/8

Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16, 5/8, 3/4, 7/8

Wrenches Included Are:

No.	Openings	Length
1723	3/8 & 7/16	4 7/8
1025	1/2 & 19/32	6 1/8
1727	9/16 & 5/8	6 5/8
1029	11/16 & 25/32	8 1/2
1731-A	3/4 & 7/8	9 1/4
1033-C	15/16 & 1	10 7/8
1037	1 1/16 & 1 1/4	12 3/4
1037-A	1 1/8 & 1 5/16	12 3/4
1041	1 7/16 & 1 5/8	15 3/4

LIST PRICE

No. 9A-38 In Cardboard Box.....\$22.65

No. 9A-38R In Roll.....24.90

Approximate Weight—9 1/2 lbs.

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Set No. 6A-26R

Six Wrenches with openings 3/8" to 1". No duplications.

Fits the following 26 sizes of bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1

Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1

Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8

Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16, 5/8, 3/4, 7/8

Wrenches Included Are:

No.	Openings	Length
1723	3/8 & 7/16	4 7/8
1025	1/2 & 19/32	6 1/8
1727	9/16 & 5/8	6 5/8
1029	11/16 & 25/32	8 1/2
1731-A	3/4 & 7/8	9 1/4
1033-C	15/16 & 1	10 7/8

LIST PRICE

6A-26 In Cardboard Box.....\$7.54

6A-26R In Roll.....9.25

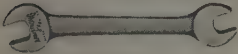
Approximate Weight—2 1/4 lbs.



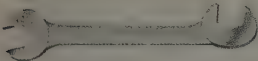
ARMSTRONG ARMALLOY
MINIATURE WRENCHES AND SETS

Drop Forged—Selected Grade Alloy Steel

Open End Pattern



15° Angle Openings



15° and 75° Angle Openings

Combination Pattern



ARMALLOY Miniature Wrenches are invaluable for accurate work on generators, radios, refrigerator units—in fact any device requiring delicate adjustment is best serviced with these wrenches which are furnished in three styles as illustrated. Drop forged from selected grade alloy steel, accurately milled, smoothly burnished, heat treated and finished in chrome plate with heads buffed bright.

Miniature Electrical Set No. 1140P



LIST PRICES

Complete in Leatherette Roll

Set 1140P—with pliers\$10.00
Set 1140—without pliers8.15
Set 1140P furnished unless otherwise specified includes 10 miniature wrenches. Nos. 1112, 1113, 1114, 1115, 1116, 1118, 1120, 1122, 1124, 1128 and 1 pair of No. 1519 electrical pliers.

Miniature Electrical Set No. H-5R



This set contains one each of Nos. H-10, H-12, H-14, H-16 and H-18 miniature wrenches. Five wrenches with openings 3/16" to 15/32". No duplications.

LIST PRICE
H-5 In Cardboard box\$3.15
H-5R In roll..... 3.70

Miniature Combination Set No. 19086
LIST PRICE—Complete in Cardboard Box.....\$6.30

This set is ideal for electrical and ignition work. Includes one each No's. 15641, 15642, 15643, 15644, 15645 and 15646 wrenches.

No.	Nominal Openings	Extreme Length Approx.	Approx. Thick- ness Heads	LIST PRICE Each	No.
15° ANGLE OPENING					
H-9	13/64 & 15/64	2 1/2	3/32	\$0.80	H-9
H-10	3/16 & 7/32	2 1/2	3/32	.80	H-10
H-12	1/4 & 9/32	3	5/32	.80	H-12
H-14	5/16 & 11/32	3 3/4	3/16	.85	H-14
H-15	9/32 & 3/8	3 3/4	3/16	.85	H-15
H-16	3/8 & 7/16	4 1/8	7/32	.85	H-16
H-18	13/32 & 15/32	4 1/8	7/32	.85	H-18
15-75° ANGLE OPENING					
1112	3/16 & 3/16	3	3/32	\$0.65	1112
1113	13/64 & 13/64	3	3/32	.65	1113
1114	7/32 & 7/32	3	3/32	.65	1114
1115	15/64 & 15/64	3	3/32	.65	1115
1116	1/4 & 1/4	3	3/32	.65	1116
1118	9/32 & 9/32	3 3/4	1/8	.72	1118
1120	5/16 & 5/16	3 3/4	1/8	.72	1120
1122	11/32 & 11/32	3 3/4	1/8	.72	1122
1124	3/8 & 3/8	3 3/4	1/8	.72	1124
1128	7/16 & 7/16	4 1/2	5/32	.82	1128
1132	1/2 & 1/2	4 1/2	5/32	.82	1132
COMBINATION BOX AND OPEN END					
15641	7/32 & 7/32	3	7/64	\$1.00	15641
15642	1/4 & 1/4	3	1/8	1.00	15642
15643	9/32 & 9/32	3 1/2	5/32	1.05	15643
15644	5/16 & 5/16	3 1/2	5/32	1.05	15644
15645	11/32 & 11/32	4 3/16	11/64	1.10	15645
15646	3/8 & 3/8	4 3/16	11/64	1.10	15646



ARMSTRONG ARMALLOY WRENCHES

CONSTRUCTION PATTERN

15° Angle

Drop Forged—Selected Grade Alloy Steel



ARMALLOY Construction Wrenches are designed for heavy duty construction work and for use wherever an extra long leverage wrench with maximum strength and minimum weight is required. The jaws are deep and narrow for a secure bearing on the nut while the handles of these wrenches are extra long and tapered for ease in lining up bolt holes.

ARMALLOY Construction Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Cadmium-plate. The wrench heads are plainly stamped with catalog number and nominal size of openings. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

In stock with openings listed. For wrenches with special openings see page 129.

On special order these wrenches can be furnished with head bent to 45° or 90° angle. An illustration of such a wrench bent to 90° is shown at right.



No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	LIST PRICE Each	No.
1205-A	13/16			1/2	14 1/2	\$ 1.86	1205-A
1205	7/8	1/2	9/16	9/16	14 1/2	1.86	1205
1206	31/32	9/16			14 1/2	1.86	1206
1206-B	1		11/16	5/8	14 1/2	1.86	1206-B
1207	1 1/16	5/8	3/4		17	2.60	1207
1207-A	1 1/8			3/4	17	2.60	1207-A
1208	1 1/4	3/4	7/8		19	3.50	1208
1208-A	1 5/16			7/8	19	3.50	1208-A
1209	1 7/16	7/8	1		21	4.80	1209
1209-A	1 1/2			1	21	4.80	1209-A
1210	1 5/8	1	1 1/8		23	6.80	1210
1210-A	1 11/16			1 1/8	23	6.80	1210-A
1211	1 13/16	1 1/8	1 1/4		21	10.00	1211
1211-A	1 7/8			1 1/4	21	10.00	1211-A
1212	2	1 1/4	1 3/8		21	10.00	1212



ARMSTRONG ARMALLOY WRENCHES

STRUCTURAL PATTERN

Straight Opening

Drop Forged—Selected Grade Alloy Steel



ARMALLOY Structural Wrenches are designed for heavy duty structural work where an entirely dependable wrench with maximum strength and minimum weight is required. The deep and narrow jaws provide for a secure bearing on the nut. The offset head allows the wrench handle to clear obstructions and enables the user to keep the wrench squarely on the nut at all times. The handles are long and tapered for ease in lining up bolt holes.

ARMALLOY Structural Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Cadmium-plate. The wrench heads are plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

In stock with openings listed. For wrenches with special openings see page 129.

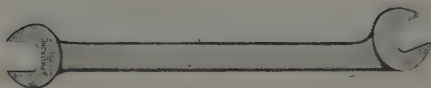
No.	Nominal Opening	For Amer.Std. HEAVY Nut (USS); Size Bolt	For Amer.Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	Thickness Head	Handle Offset At Head	LIST PRICE Each	No.
1905-A	13/16		1/2	14 1/2	17/32	1	\$2.25	1905-A
1905	7/8	1/2	9/16	14 1/2	17/32	1	2.25	1905
1906	31/32	9/16		14 1/2	17/32	1	2.25	1906
1906-B	1		5/8	14 1/2	17/32	1	2.25	1906-B
1907	1 1/16	5/8		17	5/8	1 1/8	3.15	1907
1907-A	1 1/8		3/4	17	5/8	1 1/8	3.15	1907-A
1908	1 1/4	3/4		19	11/16	1 1/4	4.25	1908
1908-A	1 5/16		7/8	19	11/16	1 1/4	4.25	1908-A
1909	1 7/16	7/8		21	3/4	1 5/16	5.85	1909
1909-A	1 1/2		1	21	3/4	1 5/16	5.85	1909-A
1910	1 5/8	1		23	13/16	1 3/8	8.10	1910
1910-A	1 11/16		1 1/8	23	13/16	1 3/8	8.10	1910-A
1911	1 13/16	1 1/8		21	7/8	1 1/2	12.25	1911
1911-A	1 7/8		1 1/4	21	7/8	1 1/2	12.25	1911-A
1912	2	1 1/4		21	7/8	1 1/2	12.25	1912



ARMSTRONG ARMALOY WRENCHES

TAPPET PATTERN

Straight and 22½° Angle, Double Head
Drop Forged—Selected Grade Alloy Steel



ARMALOY Tappet Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

These wrenches are the result of our many years' experience in making alloy steel Tappet Wrenches. Their extreme length allows the adjusting of tappets while the motor is hot, the proper time for adjusting tappets.

The long narrow jaws of these wrenches enable the user to get hold of the inaccessible tappet nut. Both openings are the same size but at different angles, one straight and the other at an angle of 22 1/2 degrees. This allows for extra fine adjustment.

In stock with openings listed. For wrenches with special openings see page 129.

No.	Nominal Openings	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length Approx.	Thick- ness Heads	LIST PRICE Each	No.
401	3/8 & 3/8		3/16			8	5/32	\$1.57	401
401-A	7/16 & 7/16		1/4	1/4	1/4	8	5/32	1.57	401-A
402	1/2 & 1/2	1/4	5/16	5/16		8 1/2	5/32	1.57	402
402-A	17/32 & 17/32					8 1/2	5/32	1.57	402-A
403	9/16 & 9/16		3/8	3/8	5/16	8 1/2	5/32	1.57	403
403-A	19/32 & 19/32	5/16				8 1/2	5/32	1.57	403-A
404	5/8 & 5/8		7/16	7/16	3/8	8 1/2	3/16	1.70	404
404-A	21/32 & 21/32					8 1/2	3/16	1.70	404-A
405	11/16 & 11/16	3/8				8 1/2	3/16	1.70	405
406	3/4 & 3/4		1/2	1/2	7/16	9	7/32	1.92	406
406-A	25/32 & 25/32	7/16				9	7/32	1.92	406-A
407	13/16 & 13/16		9/16		1/2	9	7/32	1.92	407
407-A	7/8 & 7/8	1/2	5/8	9/16	9/16	9	7/32	1.92	407-A
408	15/16 & 15/16			5/8		9	7/32	2.13	408
408-A	31/32 & 31/32	9/16				9	7/32	2.13	408-A
409	1 & 1		3/4	11/16	5/8	9	7/32	2.13	409



ARMSTRONG ARMALLOY WRENCHES

LONG THIN TAPPET PATTERN

15° Angle—Double Head
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Long Thin Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

ARMALLOY Long Thin Wrenches (Tappet Pattern) are designed with 15° angle openings at both ends and different size openings at each end. Long and thin, these Tappet Wrenches combine the qualities of lightness and handiness with great strength.

In stock with openings listed. For wrenches with special openings see page 129. For Whitworth wrenches see page 184.

New No.	Old No.	Nominal Openings	For Amer. Std. HEAVY Nuts (USS); Size Bolts	For Amer. Std. Hex Head Cap Screw; Din. Screws	For Amer. Std. LIGHT Nuts (SAE); Size bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Extreme Length Approx.	Thick-ness Heads	LIST PRICE Each
1090-A		3/8 & 7/16		3/16 & 1/4	1/4	1/4	8	5/32	\$1.05
1090		7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	8	5/32	1.05
1090-G	420	7/16 & 17/32		1/4	1/4	1/4	8	5/32	1.05
1090-D	422	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	8	5/32	1.05
1092		9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	8 1/2	3/16	1.15
1092-F	424	5/8 & 11/16	3/8	7/16	7/16	3/8	8 1/2	3/16	1.15
1094-G	425	3/4 & 13/16		1/2 & 9/16	1/2	7/16 & 1/2	9	7/32	1.25
1094	426	3/4 & 7/8	1/2	1/2 & 5/8	1/2 & 9/16	7/16 & 9/16	9	7/32	1.25



ARMSTRONG ARMALLOY TAPPET WRENCH SETS

15° Angle—Double Head
Drop Forged—Selected Grade Alloy Steel

ARMALLOY TAPPET WRENCHES are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and finished in Chrome-plate with heads buffed bright. The wrench heads are plainly stamped with catalog number and nominal sizes of opening. All openings are slightly larger than nominal sizes listed to allow for proper clearance.

These Wrench Sets have been selected to include wrenches for the adjustment of tappets on most tractors, trucks and busses as well as passenger cars.



Set No. 1032R

Six Wrenches with Openings for tappets, sizes 7/16" to 1 1/8".

Wrenches Included are:

2 Each Nos.	Openings	Length
1090	7/16 & 1/2	8
1090-D	1/2 & 9/16	8
1092-F	5/8 & 1 1/16	8 1/2

LIST PRICE

No. 1032
In Cardboard Box **\$6.50**

No. 1032-R
In Roll **7.95**

Approx. Weight 1 Lb.



Set No. 1063R

Six Wrenches with openings for tappets, sizes 1/2" to 7/8".

Wrenches Included are:

2 Each Nos.	Openings	Length
1090-D	1/2 & 9/16	8
1092-F	5/8 & 1 1/16	8 1/2
1094	3/4 & 7/8	9

LIST PRICE

No. 1063
In Cardboard Box **\$6.90**

No. 1063-R
In Roll **8.35**

Approx. Weight 1 1/2 Lb.



Set No. 1042R

Eight Wrenches with openings for tappets, sizes 7/16" to 7/8".

Wrenches Included are:

2 Each Nos.	Openings	Length
1090	7/16 & 1/2	8
1090-D	1/2 & 9/16	8
1092-F	5/8 & 1 1/16	8 1/2
1094	3/4 & 7/8	9

LIST PRICE

No. 1042
In Cardboard Box **\$9.00**

No. 1042-R
In Roll **10.85**

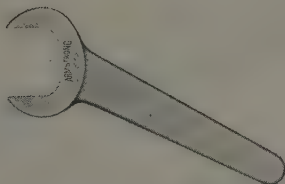
Approx. Weight. 2 3/4 Lb.



ARMSTRONG ARMALOY WRENCHES

THIN PATTERN

22½° Angle—Single Head
Drop Forged—Selected Grade Alloy Steel



ARMALOY Thin Pattern Wrenches are drop forged from selected grade alloy steel, are accurately milled, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening. All openings are milled slightly larger than nominal sizes listed to allow for proper clearance.

ARMALOY Thin Pattern Wrenches are especially designed with thin, short handles for adjusting machinery where a short handle, thin wrench is required. Use with added leverage is not recommended.

In stock with openings listed. For wrenches with special openings see page 129.

No.	Nominal Opening	Extreme Length, Approx.	HEAD		LIST PRICE Each	No.
			Thickness	Width		
1224	3/4	7	1/4	1 11/16	\$1.40	1224
*1224-A	1 1/8	7	1/4	1 11/16	1.40	1224-A
1226	13/16	7	1/4	1 11/16	1.40	1226
1228	7/8	7	1/4	1 11/16	1.40	1228
1230	15/16	7	1/4	1 11/16	1.40	1230
1232	1	7	1/4	1 11/16	1.40	1232
1232-A	1 1/32	7	1/4	1 11/16	1.40	1232-A
1234	1 1/16	7	1/4	1 7/8	1.40	1234
1236	1 1/8	7	1/4	1 7/8	1.40	1236
1236-S	1 5/16	7	1/4	1 7/8	1.40	1236-S
1236-X	1 5/16	7	7/32	1 7/8	1.40	1236-X
1238	1 3/16	7	1/4	1 7/8	1.40	1238
1240	1 1/4	7	1/4	1 7/8	1.40	1240
1241	1 9/32	7	1/4	1 7/8	1.40	1241
1242	1 5/16	7 3/4	9/32	2 5/8	1.55	1242
1244	1 3/8	7 3/4	9/32	2 5/8	1.55	1244
1246	1 7/16	7 3/4	9/32	2 5/8	1.55	1246
1248	1 1/2	7 3/4	9/32	2 5/8	1.55	1248
1250	1 9/16	7 3/4	9/32	2 5/8	1.55	1250
1252	1 5/8	7 3/4	9/32	2 5/8	1.55	1252
1256	1 3/4	7 3/4	9/32	2 5/8	1.55	1256

*Extra narrow head for working in close quarters. Recommended for light work only.



ARMSTRONG ARMALLOY WRENCHES

COMBINATION PATTERN

Drop Forged—Selected Grade Alloy Steel



ARMALLOY Combination Wrenches are drop forged from selected grade alloy steel, are accurately milled and broached, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate with heads buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached and milled slightly larger than nominal sizes listed to allow for proper clearance.

The ARMALLOY Combination Wrench is a long, slim wrench which combines an open end at one end and Box Socket double hexagon (12 Point) opening at the other. Both ends have the same size opening; the opening in the open end is offset 15° and the head of the Box Socket is offset 15°. Each end rotates hex nuts when the wrench can swing only 30°.

In stock with openings listed. For wrenches with special openings see page 129. For Whitworth wrenches see page 184.

New No.	Old No.	Nominal Openings	For Amer. Std. HEAVY Nuts (USS); Size Bolts	For Amer. Std. Hex Head Cap Screws Dia. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Extreme Length Approx.	LIST PRICE Each	No.
1161	3114	7/16 & 7/16		1/4	1/4	*No. 12—1/4	5	\$1.18	1161
1162	3116	1/2 & 1/2	1/4	5/16	5/16		5 1/4	1.28	1162
1163	3118	9/16 & 9/16		3/8	3/8	5/16	5 7/8	1.40	1163
1163-A		19/32 & 19/32	5/16				5 7/8	1.40	1163-A
1164	3120	5/8 & 5/8		7/16	7/16	3/8	6 1/4	1.55	1164
1165	3122	11/16 & 11/16	3/8				7	1.70	1165
1166	3124	3/4 & 3/4		1/2	1/2	7/16	8	1.85	1166
1166-A		25/32 & 25/32	7/16				8	1.85	1166-A
1167-A		13/16 & 13/16		9/16		1/2	10 1/2	2.00	1167-A
1167		7/8 & 7/8	1/2	5/8	9/16	9/16	10 1/2	2.00	1167
1168		15/16 & 15/16			5/8		13	2.15	1168
1170	1	& 1		3/4	11/16	5/8	13	2.15	1170
1171	1	1/16 & 1 1/16	5/8		3/4		15	2.40	1171
1172	1	1/8 & 1 1/8		7/8		3/4	15	2.40	1172
1173	1	1/4 & 1 1/4	3/4		7/8		18	2.90	1173
1174	1	5/16 & 1 5/16		1		7/8	18	2.90	1174
1175	1	3/8 & 1 3/8					20	3.45	1175
1176	1	7/16 & 1 7/16	7/8		1		21	3.45	1176

*American Standard Machine Screw & Stove Bolt Nuts.

For smaller sizes (Miniature Series) see page 133.

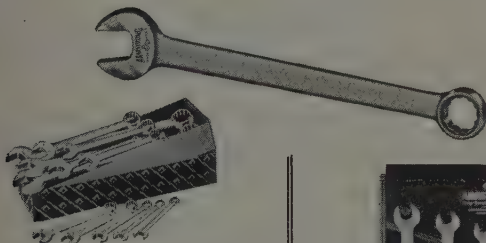


ARMSTRONG ARMALLOY COMBINATION WRENCH SETS

**Box and Open End Pattern
Drop Forged—Selected Grade Alloy Steel**

ARMALLOY Combination Wrenches are drop forged from selected grade alloy steel, are accurately milled and broached, smoothly burnished, carefully heat treated and finished in Cadmium plate with heads buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening.

All openings are slightly larger than nominal sizes listed to allow for proper clearance. These wrenches have the same size opening in both heads.



Set No. 1112

Twelve Wrenches with openings 3/8" to 1".

No duplications.

Fits the following 26 sizes of bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16, 1/2

Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4

Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8

Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16, 5/8

Wrenches Included Are:

No.	Openings		Length
15646	3/8 &	3/8	4 3/16
1161	7/16 &	7/16	5
1162	1/2 &	1/2	5 1/4
1163	9/16 &	9/16	5 7/8
1163-A	19/32 &	19/32	5 7/8
1164	5/8 &	5/8	6 1/4
1165	11/16 &	11/16	7
1166	3/4 &	3/4	8
1166-A	25/32 &	25/32	8
1167	7/8 &	7/8	10 1/2
1168	15/16 &	15/16	13
1170	1 &	1	13

LIST PRICE

No. 1112 In Cardboard Box.....\$19.60

Approximate Weight—5 1/2 lbs.



Set No. 1104R

Four Wrenches with openings 7/16" to 5/8".

No duplications.

Fits the following 12 sizes of bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4

Hex Head Cap Screws 1/4, 5/16, 3/8, 7/16

Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16

Regular Nuts 1/4, 5/16, 3/8

Wrenches Included Are:

No.	Openings		Length
1161	7/16 &	7/16	5
1162	1/2 &	1/2	5 1/4
1163	9/16 &	9/16	5 7/8
1164	5/8 &	5/8	6 1/4

LIST PRICE

No. 1104 In Cardboard Box.....\$5.40

No. 1104-R In Roll.....7.00

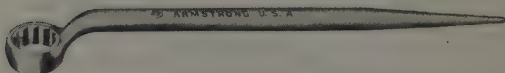
Approximate Weight—3/4 lb.



ARMSTRONG ARMALLOY WRENCHES

STRUCTURAL BOX PATTERN

Double Hexagon (12 Point) Opening
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Structural Box Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in Cadmium-plate. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

ARMALLOY Structural Box Wrenches have definite safety features that recommend their use wherever an open end structural wrench is not required. They are forged with maximum clearance at the offset, allowing the extra deep, double hexagon opening a full grip on the nut at all times. The handles are long and tapered for ease in lining up bolt holes.

In stock with openings listed. For wrenches with special openings see page 129.

New No.	Old No.	Nominal Opening	For Amer. Std. Nut (USS); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	HEAD		Handle Offset at Head	LIST PRICE Each	No.
						Thick-ness	Outside Diameter			
8905-A		13/16		1/2	12	17/32	1 1/4	23/32	\$2.25	8905-A
8905		7/8	1/2		12	9/16	1 5/16	25/32	2.25	8905
8906		15/16		(5/8)*	13 1/2	5/8	1 7/16	27/32	2.45	8906
8906-B		1		(5/8)*	13 1/2	5/8	1 9/16	7/8	2.45	8906-B
8907	9070	1 1/16	5/8		14 3/4	11/16	1 21/32	15/16	3.10	8907
8907-A		1 1/8		3/4	14 3/4	3/4	1 25/32	1 1/32	3.10	8907-A
8908	9080	1 1/4	3/4		17	13/16	1 29/32	1 5/32	3.30	8908
8908-A		1 5/16		7/8	17	7/8	2 3/32	1 7/32	3.30	8908-A
8909	9090	1 7/16	7/8		20 1/2	31/32	2 9/32	1 17/32	4.40	8909
8909-A		1 1/2		1	20 1/2	31/32	2 9/32	1 17/32	4.40	8909-A
8910	9100	1 5/8	1		21 1/2	1 1/16	2 17/32	1 17/32	5.15	8910
8910-A		1 11/16		1 1/8	21 1/2	1 1/16	2 17/32	1 17/32	5.15	8910-A
8911	9110	1 13/16	1 1/8		23	1 1/8	2 27/32	1 3/4	5.50	8911
8911-A		1 7/8		1 1/4	23	1 1/8	2 27/32	1 3/4	5.50	8911-A
8912	9120	2	1 1/4		24 1/2	1 1/4	3 1/8	1 15/16	5.85	8912
8913	9130	2 3/16	1 3/8		26	1 11/32	3 5/16	2 1/16	7.65	8913
8914	9140	2 3/8	1 1/2		27 1/2	1 7/16	3 1/2	2 1/8	8.65	8914
8915	9150	2 9/16	1 5/8		29	1 1/2	3 7/8	2 1/8	9.55	8915
8916		2 3/4	1 3/4		29	1 5/8	4 1/16	2 3/16	9.55	8916

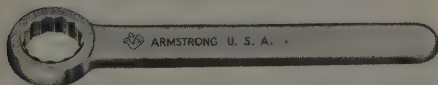
*5/8 Amer. Std. Light (S.A.E.)



ARMSTRONG ARMALLOY WRENCHES

DOUBLE HEXAGON BOX

Regular 12-Point Pattern
7½° Angle, Single Head
Drop Forged—Selected Grade Alloy Steel

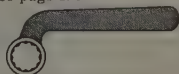


ARMALLOY Double Hexagon Box Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The faces of the heads are buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

ARMALLOY Double Hexagon Box Wrenches are particularly well adapted for working in extra close quarters. With slim head wall and double hexagon opening this wrench will rotate the nut when limited to a swing of only 15°.

In stock with openings listed. For wrenches with special openings see page 129.

On special order these wrenches can be furnished with head bent to 45° or 90° angle. An illustration of such a wrench bent to 90° is shown at right.



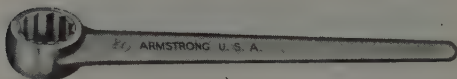
No.	Nominal Opening Across Flats	For American Standard HEAVY Nut (USS); Size Bolt	For American Standard Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For American Standard REGU-LAR Nut; Size Bolt	Extreme Length Approx.	HEAD		LIST PRICE Each	No.
							Thick-ness	Outside Diameter		
1801-A	7/16		1/4	1/4	1/4	4	17/64	27/32	\$0.75	1801-A
1801	1/2	1/4	5/16	5/16		4	17/64	27/32	.75	1801
1802-A	9/16		3/8	3/8	5/16	4 3/4	5/16	63/64	.85	1802-A
1802	19/32	5/16				4 3/4	5/16	63/64	.85	1802
1803-A	5/8		7/16	7/16	3/8	5 1/2	23/64	1 9/64	1.00	1803-A
1803	11/16	3/8				5 1/2	23/64	1 9/64	1.00	1803
1804-A	3/4		1/2	1/2	7/16	6 1/2	13/32	1 9/32	1.15	1804-A
1804	25/32	7/16				6 1/2	13/32	1 9/32	1.15	1804
1805-A	13/16		9/16		1/2	7 1/4	29/64	1 27/64	1.35	1805-A
1805	7/8	1/2	5/8	9/16	9/16	7 1/4	29/64	1 27/64	1.35	1805
1806	31/32	9/16				8	1/2	1 19/32	1.70	1806
1806-B	1		3/4	11/16	5/8	8	1/2	1 19/32	1.70	1806-B
1807	1 1/16	5/8		3/4		9 1/2	9/16	1 25/32	2.05	1807
1807-A	1 1/8		7/8		3/4	9 1/2	9/16	1 25/32	2.05	1807-A
1808	1 1/4	3/4		7/8		10 3/4	9/16	2 1/16	2.60	1808
1808-A	1 5/16		1		7/8	10 3/4	9/16	2 1/16	2.60	1808-A
1809	1 7/16	7/8		1		12	21/32	2 3/8	3.50	1809
1809-A	1 1/2		1 1/8		1	12	21/32	2 3/8	3.50	1809-A
1810	1 5/8	1		1 1/8		13 1/2	3/4	2 5/8	4.75	1810
1810-A	1 11/16		1 1/4		1 1/8	13 1/2	3/4	2 5/8	4.75	1810-A
1811	1 13/16	1 1/8		1 1/4		15	13/16	2 29/32	6.20	1811
1811-A	1 7/8				1 1/4	15	13/16	2 29/32	6.20	1811-A
1812	2	1 1/4		1 3/8		16 1/2	15/16	3 1/4	8.15	1812
1812-A	2 1/16				1 3/8	16 1/2	15/16	3 1/4	8.15	1812-A
1813	2 3/16	1 3/8		1 1/2		18	1	3 31/64	10.15	1813
1813-A	2 1/4				1 1/2	18	1	3 31/64	10.15	1813-A
1814	2 3/8	1 1/2				20	1 1/16	3 23/32	12.55	1814



ARMSTRONG ARMALLOY WRENCHES

DOUBLE HEXAGON BOX

Heavy 12-Point Pattern
7½° Angle, Single Head
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Heavy Pattern Double Hexagon Box Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate. The faces of heads are buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

The ARMALLOY Heavy Pattern Double Hexagon Box wrench for severe service is designed with extra deep head and is particularly well adapted for working in close quarters. With slim head wall and double hexagon opening this wrench will rotate the nut when limited to a swing of only 15°.

In stock with openings listed. For wrenches with special openings see page 129.

On special order these wrenches can be furnished with head bent to 45° or 90° angle. An illustration of such a wrench bent to 90° is shown at right.



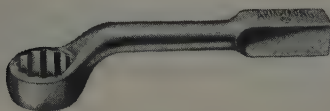
No.	Nominal Opening Across Flats	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Diam. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	Head		LIST PRICE, Each
							Thickness	Outside Diameter	
H1808	1 1/4	3/4		7/8		11 1/2	13/16	2 1/16	\$ 3.45
H1808-A	1 5/16		1		7/8	11 1/2	13/16	2 1/16	3.45
H1809	1 7/16	7/8		1		13 3/8	15/16	2 3/8	4.65
H1809-A	1 1/2		1 1/8		1	13 3/8	15/16	2 3/8	4.65
H1810	1 5/8	1		1 1/8		15 1/4	1 1/8	2 5/8	6.25
H1810-A	1 11/16		1 1/4		1 1/8	15 1/4	1 1/8	2 5/8	6.25
H1811	1 13/16	1 1/8		1 1/4		17	1 1/4	2 15/16	8.25
H1811-A	1 7/8				1 1/4	17	1 1/4	2 15/16	8.25
H1812	2	1 1/4		1 3/8		19	1 3/8	3 1/4	10.70
H1813	2 3/16	1 3/8		1 1/2		21	1 1/2	3 1/2	13.55
H1813-A	2 1/4				1 1/2	21	1 1/2	3 1/2	13.55
H1814	2 3/8	1 1/2				23	1 5/8	3 3/4	16.90
H1815	2 9/16	1 5/8				25	1 3/4	4 1/8	28.05
H1815-A	2 5/8				1 3/4	25	1 3/4	4 1/8	28.05
H1816	2 3/4	1 3/4				27	1 7/8	4 9/16	40.20
H1817-A	3				2	30	2	4 13/16	55.00
H1817	3 1/8	2				30	2	4 13/16	55.00



ARMSTRONG ARMALLOY WRENCHES

STRIKING FACE BOX

45° Angle, Offset Pattern
Double Hexagon (12 Point) Opening
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Striking Face Box Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in Cadmium-plate. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

ARMALLOY Striking Face Offset Pattern Double Hexagon Box Wrenches are designed for rugged service in close quarters where the use of a hammer or sledge is required to set or loosen a nut.

In stock with openings listed. For wrenches with special openings see page 129.

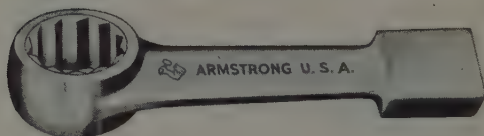
No.	Nominal Openings	Amer. Std. HEAVY Nut (USS); Size Bolt	Amer. Std. LIGHT Nut (SAE); Size Bolt	Amer. Std. REGU- LAR Nut; Size Bolt	Extreme Length Approx.	Head		LIST PRICE, each	No.
						Thickness	Outside Diameter		
8807	1 1/16	5/8	3/4		10 1/2	13/16	1 27/32	\$ 4.75	8807
8807-A	1 1/8			3/4	10 1/2	13/16	1 27/32	4.75	8807-A
8808	1 1/4	3/4	7/8		11	7/8	2 3/32	5.00	8808
8808-A	1 5/16			7/8	11	7/8	2 3/32	5.00	8808-A
8809	1 7/16	7/8	1		11 1/2	1	2 3/8	6.10	8809
8809-A	1 1/2			1	11 1/2	1	2 3/8	6.10	8809-A
8810	1 5/8	1	1 1/8		12	1 1/16	2 5/8	6.85	8810
8810-A	1 11/16			1 1/8	12	1 1/16	2 5/8	6.85	8810-A
8811	1 13/16	1 1/8	1 1/4		12 1/2	1 1/8	2 29/32	7.15	8811
8811-A	1 7/8			1 1/4	12 1/2	1 1/8	2 29/32	7.15	8811-A
8812	2	1 1/4	1 3/8		13	1 1/4	3 5/32	7.50	8812
8813	2 3/16	1 3/8	1 1/2		13 1/2	1 3/8	3 15/32	9.35	8813
8813-A	2 1/4			1 1/2	13 1/2	1 3/8	2 15/32	9.35	8813-A
8814	2 3/8	1 1/2			14	1 1/2	3 23/32	10.35	8814
8815	2 9/16	1 5/8			14 1/2	1 5/8	3 29/32	11.50	8815
8815-A	2 5/8			1 3/4	14 1/2	1 5/8	3 29/32	11.50	8815-A
8816	2 3/4	1 3/4			15	1 3/4	4 5/32	12.75	8816
8816-B	2 15/16	1 7/8			16	1 7/8	4 21/32	14.75	8816-B
8817-A	3			2	16 1/2	2	4 15/16	17.25	8817-A
8817	3 1/8	2			16 1/2	2	4 15/16	17.25	8817



ARMSTRONG ARMALLOY WRENCHES

HEAVY STRIKING FACE BOX

71½° Angle, Double Hexagon (12 Point) Opening
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Heavy Striking Face Box Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate; heads bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

ARMALLOY Heavy Striking Face Box Wrenches are particularly designed for extra rugged service in close quarters where large nuts must be set up tight, or frozen nuts loosened. The heads are extra thick to afford extra strength and full bearing in extreme service.

In stock with openings listed. For wrenches with special openings see page 129.

No.	Nominal Opening Across Flats	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Diam. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGU- LAR Nut; Size Bolt	Extreme Length Approx.	Head		LIST PRICE Each
							Thick- ness	Outside Diam.	
SFH-1808	1 1/4	3/4		7/8		7	13/16	2 1/16	\$11.00
SFH-1808-A	1 5/16		1		7/8	7	13/16	2 1/16	11.00
SFH-1809	1 7/16	7/8		1		8	15/16	2 3/8	12.20
SFH-1809-A	1 1/2		1 1/8		1	8	15/16	2 3/8	12.20
SFH-1810	1 5/8	1		1 1/8		9	1 1/8	2 5/8	13.80
SFH-1810-A	1 11/16		1 1/4		1 1/8	9	1 1/8	2 5/8	13.80
SFH-1811	1 13/16	1 1/8		1 1/4		10	1 1/4	2 15/16	15.80
SFH-1811-A	1 7/8				1 1/4	10	1 1/4	2 15/16	15.80
SFH-1812	2	1 1/4		1 3/8		11	1 3/8	3 1/4	18.25
SFH-1813	2 3/16	1 3/8		1 1/2		12	1 1/2	3 1/2	21.10
SFH-1813-A	2 1/4				1 1/2	12	1 1/2	3 1/2	21.10
SFH-1814	2 3/8	1 1/2				13	1 5/8	3 3/4	24.45
SFH-1815	2 9/16	1 5/8				14	1 3/4	4 1/8	36.05
SFH-1815-A	2 5/8				1 3/4	14	1 3/4	4 1/8	36.05
SFH-1816	2 3/4	1 3/4				15	1 7/8	4 9/16	48.20
SFH-1817-A	3				2	17	2	4 13/16	63.45
SFH-1817	3 1/8	2				17	2	4 13/16	63.45



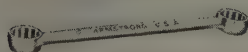
ARMSTRONG ARMALLOY WRENCHES

BOX SOCKET PATTERN

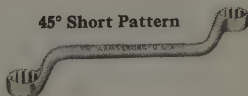
15°—45° Angle Offset (Short)

Drop Forged—Selected Grade Alloy Steel

15° Short Pattern



45° Short Pattern



ARMALLOY Box Socket Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in cadmium-plate with heads buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

ARMALLOY Box Socket Wrenches are especially suited for work in close quarters. Their thin head walls permit use where clearance is extremely limited. The hexagon openings assure a positive grip and prevent slipping. Each head has a double hexagon (12 point) opening rotating the nut where the swing is limited to an arc of only 30°.

For Whitworth wrenches see page 184.

For Selected Box Socket Wrench Sets see pages 149 and 151.

For Long Patterns see pages 148 and 150.

No.	Nominal Openings	For Amer. Std. HEAVY Nuts (USS); Size Bolts	For Amer. Std. HEX. HEAD Cap Screws; Dia. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Ex- treme Length Appr.	LIST PRICE Each	No.
15° SHORT PATTERN								
6723	3/8 & 7/16		3/16 & 1/4	1/4	1/4	4 1/2	\$0.95	6723
6725	7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	5 1/2	1.00	6725
6725-A	7/16 & 9/16		1/4 & 3/8	1/4 & 3/8	1/4 & 5/16	5 1/2	1.00	6725-A
6725-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	5 1/2	1.00	6725-B
6025	1/2 & 19/32	1/4 & 5/16	5/16	5/16		5 1/2	1.00	6025
6727	9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	6	1.10	6727
45° SHORT PATTERN								
9723	3/8 & 7/16		3/16 & 1/4	1/4	1/4	4 1/2	\$0.95	9723
9725	7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	5 1/2	1.00	9725
9725-A	7/16 & 9/16		1/4 & 3/8	1/4 & 3/8	1/4 & 5/16	5 1/2	1.00	9725-A
9725-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	5 1/2	1.00	9725-B
9025	1/2 & 19/32	1/4 & 5/16	5/16	5/16		5 1/2	1.00	9025
9727	9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	6	1.10	9727



ARMSTRONG ARMALLOY WRENCHES

BOX SOCKET PATTERN

15° Angle, Offset (Long)
Drop Forged—Selected Grade Alloy Steel



ARMALLOY Box Socket Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in cadmium-plate with heads buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

These Wrenches have straight handles with the heads offset at a 15° angle. This design provides greater clearance at the end of the handle yet retains the steady grip of a straight wrench. Each head has a double hexagon (12 point) opening rotating the nut where the swing is limited to an arc of only 30°.

In stock with openings listed. For wrenches with special openings see page 129. For Whitworth wrenches see page 184. For Short Pattern see page 147.

15° Long Pattern

No.	Nominal Openings	For Amer. Std. HEAVY Nuts (USS); Size Bolts	For Amer. Std. HEX HEAD Cap Screws; Diam. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolts	For Amer. Std. REGULAR Nuts; Size Bolts	Ex- treme Length Ap- prox.	LIST PRICE Each
7723	3/8 & 7/16		3/16 & 1/4	1/4	1/4	7 3/8	\$0.95
7725	7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	7 3/4	0.95
7725-A	7/16 & 9/16		1/4 & 3/8	1/4 & 3/8	1/4 & 5/16	8 1/4	1.00
7725-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	8 1/4	1.00
7025	1/2 & 19/32	1/4 & 5/16	5/16	5/16		8 1/4	1.00
7727	9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	9 1/4	1.05
7027	19/32 & 11/16	5/16 & 3/8				10 1/2	1.20
7727-A	5/8 & 11/16	3/8	7/16	7/16	3/8	10 1/2	1.20
7729	5/8 & 3/4		7/16 & 1/2	7/16 & 1/2	3/8 & 7/16	10 1/2	1.20
7029-B	11/16 & 3/4	3/8	1/2	1/2	7/16	11	1.35
7029	11/16 & 25/32	3/8 & 7/16				11	1.35
7729-A	3/4 & 25/32	7/16	1/2	1/2	7/16	12	1.40
7731-A	3/4 & 7/8	1/2	1/2 & 5/8	1/2 & 9/16	7/16 & 9/16	12	1.40
7031-B	25/32 & 13/16	7/16	9/16		1/2	12 3/4	1.55
7031	25/32 & 7/8	7/16 & 1/2	5/8	9/16	9/16	12 3/4	1.55
7731-B	13/16 & 7/8	1/2	9/16 & 5/8	9/16	1/2 & 9/16	12 3/4	1.55
7033-A	7/8 & 15/16	1/2	5/8	9/16 & 5/8	9/16	13 3/4	1.85
7733	7/8 & 1	1/2	5/8 & 3/4	9/16 & 11/16	9/16 & 5/8	13 3/4	1.85
7033-C	15/16 & 1		3/4	5/8 & 11/16	5/8	13 3/4	1.85
7034-A	15/16 & 1 1/16	5/8	5/8 & 3/4			15 1/2	2.95
7735	1 & 1 1/8		3/4 & 7/8	11/16	5/8 & 3/4	17 1/4	3.30
7735-A	1 1/16 & 1 1/8	5/8	7/8	3/4	3/4	17 1/4	3.30
7037	1 1/16 & 1 1/4	5/8 & 3/4		3/4 & 7/8		17 1/4	3.30
7037-A	1 1/8 & 1 5/16		7/8 & 1		3/4 & 7/8	19	3.80
*7039-B	1 1/4 & 1 5/16	3/4	1	7/8	7/8	19	3.80
7039	1 1/4 & 1 7/16	3/4 & 7/8		7/8 & 1		19	3.80
7039-A	1 5/16 & 1 1/2		1 & 11/8		7/8 & 1	19	3.80
**7040-B	1 7/16 & 1 1/2	7/8	11/8	1	1	21	4.40
†7041	1 7/16 & 1 5/8	7/8 & 1		1 & 1 1/8		23	4.95
7742-B	1 1/2 & 1 11/16		1 1/8 & 1 1/4		1 & 11/8	23	4.95

* Old No. 7037-B

† Old No. 7043.

** Old No. 7041.



ARMSTRONG ARMALLOY BOX SOCKET WRENCH SETS

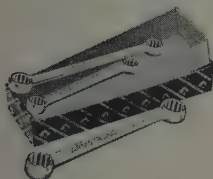
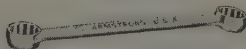
15° Angle, Offset Pattern

Drop Forged—Selected Grade Alloy Steel

Long Pattern



Short Pattern



Set No. 6703
(Short)

Three Wrenches with openings 3/8" to 5/8".
Fits the following 13 sizes of bolt heads, nuts
and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4
Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8,
7/16
Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16
Regular Nuts 1/4, 5/16, 3/8

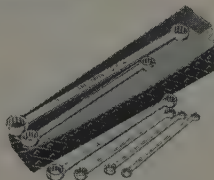
Wrenches Included Are:

No.	Openings	Length
6723	3/8 & 7/16	4 1/2
6725	7/16 & 1/2	5 1/2
6727	9/16 & 5/8	6

LIST
PRICE

No. 6703 In Cardboard Box\$3.05

Approximate Weight—1/2 lb.



Set No. 7006
(Long)

Six Wrenches with openings 3/8" to 1". No.
Duplications. Fits the following 27 sizes of
bolt heads, nuts and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16, 1/2
Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8,
7/16, 1/2, 5/8, 3/4
Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16, 1/2,
9/16, 5/8, 11/16
Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16, 5/8

Wrenches Included Are:

No.	Openings	Length
7723	3/8 & 7/16	7 3/8
7025	1/2 & 19/32	8 1/4
7727	9/16 & 5/8	9 1/4
7029	11/16 & 25/32	11
7731-A	3/4 & 7/8	12
7033-C	15/16 & 1	13 3/4

LIST
PRICE

No. 7006 In Cardboard Box\$7.60

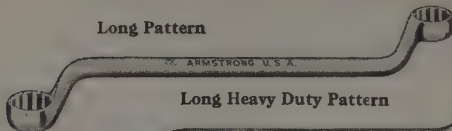
Approximate Weight—2 3/4 lb.



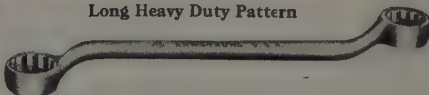
ARMSTRONG ARMALLOY WRENCHES BOX SOCKET PATTERN

45° Angle, Double Offset
Drop Forged—Selected Grade Alloy Steel

Long Pattern



Long Heavy Duty Pattern



For a complete description of ARMALLOY Box Socket Wrenches see page 147. For Whitworth wrenches see page 184. For Short Pattern see page 147.

For carefully selected wrench sets see page 151.

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Ex-treme Length, Ap-prox.	LIST PRICE Each
LONG PATTERN							
8723	3/8 & 7/16		3/16 & 1/4	1/4		7 3/4	\$0.95
8725	7/16 & 1/2	1/4	1/4 & 5/16	1/4 & 5/16	1/4	8 1/4	0.95
8725-A	7/16 & 9/16		1/4 & 3/8	1/4 & 3/8	1/4 & 5/16	8 3/4	1.00
8725-B	1/2 & 9/16	1/4	5/16 & 3/8	5/16 & 3/8	5/16	8 3/4	1.00
8025	1/2 & 19/32	1/4 & 5/16	5/16	5/16		8 3/4	1.00
8727	9/16 & 5/8		3/8 & 7/16	3/8 & 7/16	5/16 & 3/8	9 3/4	1.05
8027	19/32 & 11/16	5/16 & 3/8				11	1.20
8727-A	5/8 & 11/16	3/8	7/16	7/16	3/8	11	1.20
8729	5/8 & 3/4		7/16 & 1/2	7/16 & 1/2	3/8 & 7/16	11	1.20
8029-B	11/16 & 3/4	3/8	1/2	1/2	7/16	11	1.35
8029	11/16 & 25/32	3/8 & 7/16				11	1.35
8729-A	3/4 & 25/32	7/16	1/2	1/2	7/16	12 1/2	1.40
8731-A	3/4 & 7/8	1/2	1/2 & 5/8	1/2 & 9/16	7/16 & 9/16	12 1/2	1.40
8031-B	25/32 & 13/16	7/16	9/16		1/2	12 1/2	1.40
8031	25/32 & 7/8	7/16 & 1/2	5/8	9/16	9/16	12 1/2	1.40
8731-B	13/16 & 7/8	1/2	9/16 & 5/8	9/16	1/2 & 9/16	12 1/2	1.40
8033-A	7/8 & 15/16	1/2	5/8	9/16 & 5/8	9/16	14 1/2	1.85
8733	7/8 & 1	1/2	5/8 & 3/4	9/16	9/16 & 5/8	14 1/2	1.85
8033-C	15/16 & 1		3/4	5/8 & 11/16	5/8	14 1/2	1.85
8034-A	15/16 & 1 1/16	5/8		5/8 & 3/4		15 1/2	2.95
8735	1 & 1 1/8		3/4 & 7/8	11/16	5/8 & 3/4	17	3.30
8735-A	1 1/16 & 1 1/8	5/8	7/8	3/4	3/4	17	3.30
8037	1 1/16 & 1 1/4	5/8 & 3/4		3/4 & 7/8		17	3.30
8037-A	1 1/8 & 1 5/16		7/8 & 1		3/4 & 7/8	19	3.80
8039-B	1 1/4 & 1 5/16	3/4	1	7/8	7/8	19	3.80
8039	1 1/4 & 1 7/16	3/4 & 7/8		7/8 & 1		19	3.80
8039-A	1 5/16 & 1 1/2		1 & 11/8		7/8 & 1	19	3.80

LONG HEAVY DUTY PATTERN

8040-B	1 7/16 & 1 1/2	7/8	11/8	1	1	21	4.40
*8041	1 7/16 & 1 5/8	7/8 & 1		1 & 1 1/8		23	4.95
8742-B	1 1/2 & 1 11/16		11/8 & 1 1/4		1 & 11/8	23	4.95
**8045	1 13/16 & 2	11/8 & 1 1/4		1 1/4 & 1 3/8		25	8.45
†8049	2 3/16 & 2 3/8	13/8 & 1 1/2		1 1/2		27	10.60
††8053	2 9/16 & 2 3/4	15/8 & 1 3/4				30	16.25

*Old No. 5041

**Old No. 5045

†Old No. 5049

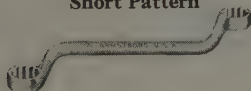
††Old No. 5053



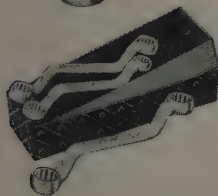
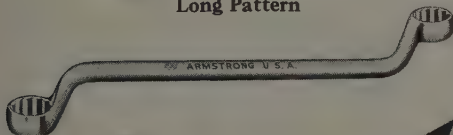
ARMSTRONG ARMALLOY BOX SOCKET WRENCH SETS

45° Angle, Double Offset Pattern
Drop Forged—Selected Grade Alloy Steel

Short Pattern



Long Pattern



Set No. 9703
(Short)

Three Wrenches with openings 3/8" to 5/8".
Fits the following 13 sizes of bolt heads, nuts
and cap screws:

American Standard

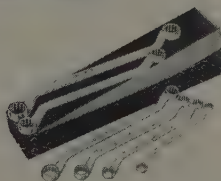
Heavy Nuts (U.S.S.) 1/4
Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8,
7/16
Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16
Regular Nuts 1/4, 5/16, 3/8

Wrenches Included Are:

No.	Openings	Length
9723	3/8 & 7/16	4 1/2
9725	7/16 & 1/2	5 1/2
9727	9/16 & 5/8	6

LIST PRICE

Set No. 9703 In Cardboard Box. \$3.05
Approximate Weight—1/2 lb.



Set No. 8006
(Long)

Six Wrenches with openings 3/8" to 1". No
duplications.
Fits the following 27 sizes of bolt heads, nuts
and cap screws:

American Standard

Heavy Nuts (U.S.S.) 1/4, 5/16, 3/8, 7/16, 1/2
Hex Head Cap Screws 3/16, 1/4, 5/16, 3/8,
7/16, 1/2, 5/8, 3/4
Light Nuts (S.A.E.) 1/4, 5/16, 3/8, 7/16, 1/2,
9/16, 5/8, 11/16
Regular Nuts 1/4, 5/16, 3/8, 7/16, 9/16, 5/8

Wrenches Included Are:

No.	Openings	Length
8723	3/8 & 7/16	7 3/4
8025	1/2 & 19/32	8 3/4
8727	9/16 & 5/8	9 3/4
8029	11/16 & 25/32	11
8731-A	3/4 & 7/8	12 1/2
8033-C	15/16 & 1	14 1/2

LIST PRICE

Set No. 8006 In Cardboard Box. \$7.60
Approximate Weight—4 1/4 lbs.

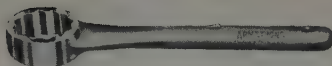


ARMSTRONG ARMALLOY WRENCHES

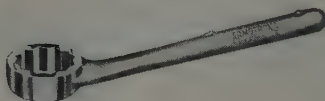
BOX SOCKET PATTERN

Stub End Type for Tubular Handles
Double Hexagon (12 Point) Openings
Drop Forged—Selected Grade Alloy Steel

Straight Pattern



15° Angle Offset



45° Angle Offset



ARMALLOY Box Socket Wrenches are drop forged from selected grade alloy steel, are accurately broached, smoothly burnished, carefully heat treated and attractively finished in Chrome-plate with heads buffed bright. Each wrench is plainly stamped with catalog number and nominal size of opening. All openings are broached slightly larger than nominal sizes listed to allow for proper clearance.

These ruggedly designed long leverage ARMALLOY Box Socket Wrenches are available in three styles: Straight, 15 degree Angle and Off-Set. All are equipped with an improved handle stop and a positive locking device by means of which one tubular handle may be used with various sizes and styles of wrenches. A single or double end wrench of the style and size required can be quickly assembled. Each head has a double hexagon (12 Point) opening.

In stock with openings listed. For wrenches with special openings see page 129.

(Continued on Page 153)



ARMSTRONG ARMALLOY WRENCHES

BOX SOCKET PATTERN

Stub End Type for Tubular Handles

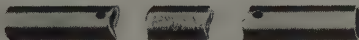
(Continued from Page 152)

STRAIGHT		15° ANGLE		OFFSET		Nominal Opening	For Handle No.	†Approx. Length End to Handle Stop
No.	*List Price Each	No.	*List Price Each	No.	*List Price Each			
S-40	\$ 3.60	A-40	\$ 3.60	O-40	\$ 4.15	1 1/4	M-280	4 5/8
S-42	4.70	A-42	4.70	O-42	5.20	1 5/16	M-280	4 3/4
S-44	5.75	A-44	5.75	O-44	6.95	1 3/8	M-280	5 1/2
S-46	5.75	A-46	5.75	O-46	6.95	1 7/16	M-280	5 5/8
S-48	6.25	A-48	6.25	O-48	7.50	1 1/2	M-280	6
S-52	7.15	A-52	7.15	O-52	9.00	1 5/8	M-320	6 1/2
S-54	7.35	A-54	7.35	O-54	9.25	1 11/16	M-320	6 1/2
S-56	7.60	A-56	7.60	O-56	9.45	1 3/4	M-320	6 5/8
S-58	7.80	A-58	7.80	O-58	9.65	1 13/16	M-320	7
S-60	9.35	A-60	9.65	O-60	11.25	1 7/8	M-320	7 1/2
S-64	9.35	A-64	9.65	O-64	11.25	2	M-320	7 1/2
S-70	10.10	A-70	10.60	O-70	12.05	2 3/16	M-320	7 1/2
S-72	10.10	A-72	10.60	O-72	12.05	2 1/4	M-320	7 1/2
S-76	12.80	A-76	13.45	O-76	14.00	2 3/8	M-360	8
S-78	13.05	A-78	13.75	O-78	15.10	2 7/16	M-360	8
S-82	13.30	A-82	14.00	O-82	15.30	2 9/16	M-360	8
S-84	13.55	A-84	14.85	O-84	16.10	2 5/8	M-360	8
S-88	14.30	A-88	15.60	O-88	16.85	2 3/4	M-360	8
S-90	15.05	A-90	16.20	O-90	17.40	2 13/16	M-360	8
S-94	15.85	A-94	16.85	O-94	17.90	2 15/16	M-360	8
S-96	16.10	A-96	17.10	O-96	18.15	3	M-360	8
S-98	16.35	A-98	17.40	O-98	18.40	3 1/8	M-360	8
S-108	16.60	A-108	17.65	O-108	18.70	3 3/8	M-360	8
S-112	19.95	A-112	22.00	O-112	24.00	3 1/2	M-420	10

*Price does not include Handle.

†Length is for 45° Offset Wrenches, straight and 15° are slightly longer.

SEAMLESS STEEL TUBULAR HANDLES



Seamless Steel Tubular Handles are furnished for use with above wrenches. They are accurately made from special steel and are very stiff. Finished in Chrome-plate.

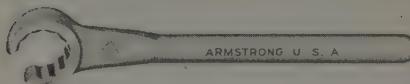
Handle No.	LIST PRICE Each	Extreme Length	Inside Diameter	Outside Diameter
M-280	\$ 4.80	24	7/8	1 1/8
M-320	6.60	30	1	1 1/4
M-360	10.25	36	1 1/8	1 7/16
M-420	14.30	42	1 5/8	2



ARMSTRONG ARMALLOY WRENCHES

FLARE NUT PATTERN

Drop Forged—Selected Grade Alloy Steel



ARMALLOY Flare Nut Wrenches are drop forged from selected grade alloy steel, are accurately broached and attractively finished in Chrome-plate. The wrench heads are buffed bright and plainly stamped with catalog number and nominal size of opening.

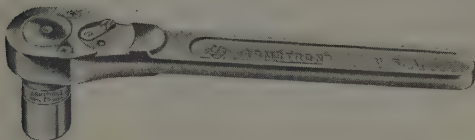
ARMALLOY Flare Nut Wrenches have been especially designed for use over tubing and pipe in close quarters. They will not damage soft brass flare nuts and are particularly useful for refrigeration, air-conditioning and aircraft service work.

No.	Nominal Opening	Diameter of Head	Depth of Head	Overall Length Approx.	LIST PRICE Each	No.
4112	3 8	.773	5 16	6 3 8	\$2.10	4112
4114	7 16	.856	11 32	6 7 16	2.15	4114
4116	1 2	.939	7 16	6 3 4	2.25	4116
4118	9 16	1.032	7 16	6 3 4	2.35	4118
4120	5/8	1.115	15 32	7 1 16	2.40	4120
4122	11/16	1.198	1/2	7 1 8	2.50	4122
4124	3/4	1.281	9 16	7 3 8	2.60	4124
4126	13/16	1.364	5 8	7 7 16	2.65	4126
4128	7/8	1.439	5 8	7 3 4	2.75	4128
4130	15/16	1.503	5 8	7 3 4	3.25	4130
4132	1	1.590	11/16	7 13 16	3.30	4132
4134	1 1/16	1.671	3/4	7 7 8	3.50	4134
4136	1 1/8	1.753	25/32	7 7 8	3.75	4136
*4138	1 3/16	1.844	13 16	7 29 32	3.80	4138
*4140	1 1/4	1.924	27/32	8	4.00	4140
*4144	1 3/8	2.089	29/32	10	5.65	4144
*4148	1 1/2	2.260	31 32	10 1 8	7.45	4148
*4152	1 5/8	2.424	1 1 32	10 1 4	7.85	4152

*These sizes made special to order.



ARMSTRONG ARMALLOY SOCKET WRENCHES



ARMSTRONG Armalloy Socket Wrenches are designed to embody strength, dependability, and handiness—qualities which have been recognized features of ARMSTRONG TOOLS for over 55 years.

ARMSTRONG Armalloy Socket Wrenches are made from a selected grade alloy steel, are machined and gauged to accurate limits, heat treated, hardened and beautifully finished in chrome-plate. Furnished in five drive sizes with a full assortment of driving unit sockets and attachments which permit assembly of the proper wrench at all times.

(NM)-MINIATURE SERIES— $\frac{1}{4}$ " Square Drive. Ideally suited for work calling for delicate adjustments. Includes openings $\frac{5}{32}$ to $\frac{1}{2}$ " 4, 6, 8, and 12 point sockets. (see pages 156 to 159)

(F)-LIGHT SERIES— $\frac{3}{8}$ " Square Drive. Strong and light with straight thin wall sockets. Especially suitable for work in close quarters. Includes openings $\frac{1}{4}$ to $\frac{3}{4}$ "—8 point extra deep, regular 12 point, extra deep 12 point, and 12 point flex sockets. (See pages 160 to 163)

(S)-STANDARD SERIES— $\frac{1}{2}$ " Square Drive. Perfect for general service work of all types. Slim head walls enable these sockets to operate with a sure grip in close or obstructed places. Includes openings $\frac{7}{16}$ to $1\frac{1}{4}$ "—regular 8 point, regular 12 point, extra deep 12 point, and flex 12 point sockets. (See pages 164 to 171)

(H)-HEAVY DUTY SERIES— $\frac{3}{4}$ " Square Drive. Especially designed for heavy duty service where reliable strength without unnecessary weight is required. Includes openings $\frac{7}{8}$ to $2\frac{1}{4}$ "—regular 12 point and extra deep 12 point sockets. (See pages 172 to 174)

(X)-EXTRA HEAVY DUTY SERVICE—1" Square Drive. This line is designed to handle the most rugged jobs where maximum strength is required. Includes openings $1\frac{1}{16}$ to $3\frac{1}{8}$ "—regular 12 point sockets. (See pages 175 to 177)

For a complete assortment of HI-TEN and ARMALLOY Open End and Box Wrenches see pages 103 to 154.



ARMSTRONG ARMALOY SOCKET WRENCHES

Miniature Series— $\frac{1}{4}$ " Square Drive

ARMSTRONG Miniature Socket Wrenches are invaluable for all work on nuts from $\frac{3}{16}$ " to 1 2", inclusive, across flats. Slim and tapered, they solve the assembly and service problem of generators, ignition units, radios and any other work requiring a secure grip for delicate adjustments.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

SOCKETS



Regular
Double
Hexagon
(12 Point)
Opening



Square
Double
Square
(8 Point)
Openings



Extra Deep
Double
Hexagon
(12 Point)
Opening

No.	Nominal Opening	LIST PRICE Each	Amer. Std. HEAVY Nut (U.S.S.); Size Bolt	Amer. Std. Hex Head Cap Screw; Diam. Screw	Amer. Std. LIGHT Nut (S.A.E.); Size Bolt	Amer. Std. Machine Screw Hex Nut No.
Regular Sockets—With Single Hexagon (6 Point) Opening						
NM-606	$\frac{3}{16}$	\$0.45				2 & 3
NM-607	$\frac{7}{32}$	.45				
NM-608	$\frac{1}{4}$	.45				4
NM-609	$\frac{9}{32}$	.45				
With Double Hexagon (12 Point) Opening						
NM-1210	$\frac{5}{16}$	\$0.45	$\frac{1}{8}$	$\frac{1}{8}$		5 & 6
NM-1211	$\frac{11}{32}$	.45				8
NM-1212	$\frac{3}{8}$	.45		$\frac{3}{16}$		10
NM-1214	$\frac{7}{16}$	.45		$\frac{1}{4}$	$\frac{1}{4}$	12 & $\frac{1}{4}$
NM-1216	$\frac{1}{2}$	.45	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{5}{16}$	
Square Sockets—With Single Square (4 Point) Opening						
NM-406	$\frac{3}{16}$	\$0.45				2 & 3
NM-407	$\frac{7}{32}$	.45				
NM-408	$\frac{1}{4}$	.45				4
With Double Square (8 Point) Opening						
NM-810	$\frac{5}{16}$	\$0.45				5 & 6
NM-812	$\frac{3}{8}$	.45				10
Extra Deep Sockets—2" Long—With Single Hexagon (6 Point) Opening						
NMD-608	$\frac{1}{4}$	\$0.60				4
NMD-609	$\frac{9}{32}$	.60				
With Double Hexagon (12 Point) Opening						
NMD-1210	$\frac{5}{16}$	\$0.60	$\frac{1}{8}$	$\frac{1}{8}$		5 & 6
NMD-1211	$\frac{11}{32}$	.60				8
NMD-1212	$\frac{3}{8}$	.60		$\frac{3}{16}$		10
NMD-1214	$\frac{7}{16}$	.60		$\frac{1}{4}$	$\frac{1}{4}$	12 & 14



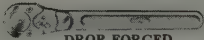
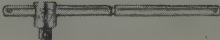
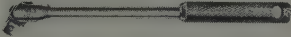


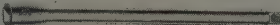


ARMSTRONG ARMALLOY SOCKET WRENCHES

Miniature Series—1/4" Square Drive

ARMSTRONG Miniature Socket Wrenches are invaluable for all work on nuts from 3/16" to 1/2", inclusive, across flats. Slim and tapered, they solve the assembly and service problem of generators, ignition units, radios and any other work requiring a secure grip for delicate adjustments.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

DRIVE TOOLS

No.	Description	LIST PRICE Each
	 DROP FORGED	
NMA-51	IMPROVED REVERSIBLE RATCHET—4 1/2" Long.	\$2.75
		
NM-20A	SLIDING T HANDLE—4 1/2" Long.	1.02
		
NM-42	FLEXIBLE HINGE HANDLE—5 3/4" Long. Drilled for Sliding Bar	1.40
NM-42B	SLIDING BAR—1/4 x 4 1/2. For NM-42. ....	.25
		
NM-110	EXTENSION-DRIVER. A spin-grip extension. Knurled handle may be locked for use as a driver—5 1/2" Long.	1.44
		
*NM-106	MOULDED SHOCK-PROOF HANDLE WITH EXTENSION—6" Long.	1.50
		
NM-102	EXTENSION—2" Long. ....	.85
NM-115	EXTENSION—6" Long.	1.08
NM-116	EXTENSION—14" Long.	1.25
NMP-1	 PHILLIPS SCREW DRIVER SOCKET ATTACHMENT —No. 1 Drive to fit screws No. 4 and smaller. ....	.90
NMP-2	 PHILLIPS SCREW DRIVER SOCKET ATTACHMENT —No. 2 Drive to fit screws Nos. 5 to 9 inclusive. ....	.90

*Old No. NM-250X.

For a complete list of Reversible and Plug Connector Type Ratchets see page 180.



ARMSTRONG ARMALOY SOCKET WRENCH SETS

Miniature Series— $\frac{1}{4}$ " Square Drive

Each ARMSTRONG Miniature Series Socket Wrench Set includes Miniature Sockets and Drive Tools for the proper adjustment of generators, ignition units, radios and all extra small nuts in close quarters.

Made from selected alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.



10 Pieces

LIST PRICE

Set No. NM-10 Complete with Steel Case. **\$7.65**

Approximate Weight 1 lb.

Miniature Set No. NM-10

Set consists of 8 Sockets with Flexible Hinge Handle and Sliding Bar

CONTENTS

- 1 Each Hexagon Sockets, Nos.:
 NM-606— $\frac{3}{16}$ " NM-608— $\frac{1}{4}$ "
 NM-607— $\frac{7}{32}$ " NM-609— $\frac{9}{32}$ "
- 1 Each Double Hexagon Sockets, Nos.:
 NM-1210— $\frac{5}{16}$ " NM-1212— $\frac{3}{8}$ "
 NM-1211— $\frac{11}{32}$ " NM-1214— $\frac{7}{16}$ "
- 1 Flexible Hinge Handle No. NM-42
- 1 Sliding Bar No. NM-42B

Electrical Set No. NM-18

This set includes 5 miniature 15° angle open end wrenches, 8 sockets with reversible ratchet, sliding T handle, 2 extensions and pair of miniature pliers.

CONTENTS

- 1 Each Hexagon Sockets, Nos.:
 NM-606— $\frac{3}{16}$ " NM-608— $\frac{1}{4}$ "
 NM-607— $\frac{7}{32}$ " NM-609— $\frac{9}{32}$ "
- 1 Each Double Hexagon Sockets, Nos.:
 NM-1210— $\frac{5}{16}$ " NM-1212— $\frac{3}{8}$ "
 NM-1211— $\frac{11}{32}$ " NM-1214— $\frac{7}{16}$ "
- 1 Each Miniature 15° Angle Wrenches, Nos.:
 H-10— $\frac{3}{16}$ " & $\frac{7}{32}$ " H-14— $\frac{5}{16}$ " & $\frac{11}{32}$ "
 H-12— $\frac{1}{4}$ & $\frac{9}{32}$ " H-16— $\frac{3}{8}$ " & $\frac{7}{16}$ "
 H-18— $\frac{13}{32}$ & $\frac{15}{32}$ "
- 1 Reversible Ratchet No. NMA-51
- 1 Sliding T Handle No. NM-20A
- 1 Short Extension Bar No. NM-102
- 1 Long Extension Bar No. NM-115
- 1 Pair Miniature Pliers No. 1519



18 Pieces

LIST PRICE

Set No. NM-18 Complete as illustrated. **\$18.20**

Without pliers. **\$16.35**

Approximate Weight 1 $\frac{3}{4}$ lbs.



ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Miniature Series— $\frac{1}{4}$ " Square Drive

Combination Electrical Set No. NM-24

This combination set includes 10 Miniature 15° - 75° Angle Open End Wrenches, 8 Sockets with Reversible Ratchet, Sliding T Handle, Moulded Shock-proof Handle, 2 Extensions and Miniature Pliers.



24 Pieces

	LIST PRICE
Set No. NM-24 Complete as illustrated	\$22.50
Without Pliers	\$20.65

Approximate Weight 2 lbs.

CONTENTS

1 Each Hexagon Sockets, Nos.:	1 Each Miniature Wrenches— 15° - 75° Angle, Open End, Nos.:
NM-606— $\frac{3}{16}$ " NM-608— $\frac{1}{4}$ "	1112— $\frac{3}{16}$ " & $\frac{3}{16}$ "
NM-607— $\frac{7}{32}$ " NM-609— $\frac{9}{32}$ "	1113 $\frac{13}{64}$ " & $\frac{13}{64}$ "
1 Each Double Hexagon Sockets, Nos.:	1114 — $\frac{7}{32}$ " & $\frac{7}{32}$ "
NM-1210— $\frac{5}{16}$ " NM-1212— $\frac{3}{8}$ "	1115 — $\frac{15}{64}$ " & $\frac{15}{64}$ "
NM-1211— $\frac{11}{32}$ " NM-1214— $\frac{7}{16}$ "	1116 — $\frac{1}{4}$ " & $\frac{1}{4}$ "
1 Reversible Ratchet No. NMA-51	1118 — $\frac{9}{32}$ " & $\frac{9}{32}$ "
1 Sliding T Handle No. NM-20A	1120 — $\frac{5}{16}$ " & $\frac{5}{16}$ "
1 Moulded Shock Proof Handle No. NM-106	1122— $\frac{11}{32}$ " & $\frac{11}{32}$ "
1 Short Extension No. NM-102	1124 — $\frac{3}{8}$ " & $\frac{3}{8}$ "
1 Long Extension No. NM-115	1128 — $\frac{7}{16}$ " & $\frac{7}{16}$ "
1 Miniature Pliers No. 1519	



ARMSTRONG ARMALLOY SOCKET WRENCHES

Light Series— $\frac{3}{8}$ " Square Drive

Thin head walls allow these sockets to reach and grip the crowded or awkwardly placed nut. In close quarters, the double hexagon opening rotates the nut when the working arc is limited to only 30°.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

SOCKETS



**REGULAR
HEXAGON**
Double Hexagon
(12 Point) Openings



**FLEX
HEXAGON**
Double Hexagon
(12 Point) Openings

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	For Amer. Std. Machine Screw Hex. Nut No.	LIST PRICE Each	No.
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REGULAR HEXAGON SOCKETS

With Double Hexagon (12 Point) Openings

F-1208	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{8}$			4	\$0.72	F-1208
F-1210	$\frac{5}{16}$					5 & 6	.72	F-1210
F-1211	$\frac{11}{32}$					8	.72	F-1211
F-1212	$\frac{3}{8}$		$\frac{3}{16}$			10	.72	F-1212
F-1214	$\frac{7}{16}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	12	.72	F-1214
F-1216	$\frac{1}{2}$		$\frac{5}{16}$	$\frac{5}{16}$			.72	F-1216
F-1218	$\frac{9}{16}$		$\frac{3}{8}$	$\frac{3}{8}$	$\frac{5}{16}$		.72	F-1218
F-1220	$\frac{5}{8}$		$\frac{7}{16}$	$\frac{7}{16}$	$\frac{3}{8}$		.72	F-1220
F-1222	$\frac{11}{16}$	$\frac{3}{8}$					.84	F-1222
F-1224	$\frac{3}{4}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{7}{16}$		.84	F-1224

FLEX SOCKETS

With Double Hexagon (12 Point) Openings

FX-1212	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{16}$			10	\$2.30	FX-1212
FX-1214	$\frac{7}{16}$		$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	12	2.30	FX-1214
FX-1216	$\frac{1}{2}$		$\frac{5}{16}$	$\frac{5}{16}$			2.30	FX-1216
FX-1218	$\frac{9}{16}$		$\frac{3}{8}$	$\frac{3}{8}$	$\frac{5}{16}$		2.55	FX-1218
FX-1220	$\frac{5}{8}$	$\frac{3}{8}$	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{3}{8}$		2.55	FX-1220
FX-1222	$\frac{11}{16}$						2.65	FX-1222
FX-1224	$\frac{3}{4}$		$\frac{1}{2}$	$\frac{1}{2}$	$\frac{7}{16}$		2.65	FX-1224



ARMSTRONG ARMALLOY SOCKET WRENCHES

Light Series— $\frac{3}{8}$ " Square Drive

Thin head walls allow these sockets to reach and grip the crowded or awkwardly placed nut. In close quarters, the double hexagon opening rotates the nut when the working arc is limited to only 30°.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

SOCKETS



**EXTRA DEEP
HEXAGON**
Double Hexagon
(12 Point) Openings



**EXTRA DEEP
SQUARE**
Double Square
(8 Point) Openings



CROWFOOT
Straight
Milled Opening

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	For Amer. Std. Machine Screw Hex. Nut No.	LIST PRICE Each	No.
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EXTRA DEEP SQUARE SOCKETS—All are 1 1/2" Long.

With Double Square (8 Point) Openings

FD-814	7/16				1/4		\$0.85	FD-814
FD-816	1/2	1/4					.85	FD-816
FD-818	9/16				5/16		.92	FD-818
FD-820	5/8				3/8		.92	FD-820

EXTRA DEEP HEXAGON SOCKETS—From 2" to 2 5/8" Long.

With Double Hexagon (12 Point) Openings

FD-1214	7/16		1/4	1/4	1/4	12	\$0.77	FD-1214
FD-1216	1/2	1/4	5/16	5/16			.77	FD-1216
FD-1218	9/16		3/8	3/8	5/16		.77	FD-1218
FD-1220	5/8		7/16	7/16	3/8		.77	FD-1220
FD-1222	11/16	3/8					.90	FD-1222
FD-1224	3/4		1/2	1/2	7/16		1.00	FD-1224
FD-1226	13/16		9/16		1/2		1.00	FD-1226

CROWFOOT ATTACHMENTS

FC-1700	3/8		3/16			10	\$0.80	FC-1700
FC-1701	7/16		1/4	1/4	1/4	12	.80	FC-1701
FC-1001	1/2	1/4	5/16	5/16			.90	FC-1001
FC-1702	9/16		3/8	3/8	5/16		.90	FC-1702
FC-1703	5/8		7/16	7/16	3/8		1.00	FC-1703
FC-1003	11/16	3/8					1.00	FC-1003

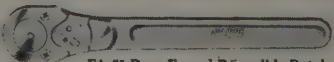
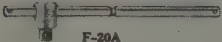

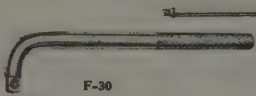

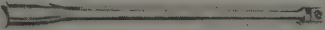


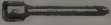


ARMSTRONG ARMALLOY SOCKET WRENCHES

Light Series— $\frac{3}{8}$ " Square Drive

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

DRIVE TOOLS

No.	Description	LIST PRICE EACH
FA-51	<p>REVERSIBLE RATCHET—can be instantly reversed by snapping the reversing lever to position ON or position OFF. This feature is particularly convenient for close quarter operations. The ratchets will rotate the socket where the working arc is limited to only 15°. All parts are made entirely of alloy and high tensile steel, carefully heat treated to maximum strength. Improved design prevents the excessive wear and looseness common to the ordinary reversible ratchet. Length 7".....</p>  <p>FA-51 Drop Forged Reversible Ratchet</p>	\$4.50
	  <p>F-20A F-40</p>	
F-20A	SLIDING T HANDLE—6 1/2" long.....	1.35
F-40	FLEXIBLE HINGE HANDLE—8 1/2" long. May be used as extension. Drilled for sliding bar.....	2.70
F-40B	SLIDING BAR 5/16"x 7". For No. F-40.....	.40
	  <p>F-30 F-15</p>	
F-30	OFFSET HANDLE. Knurled Grip—7 3/4" long.....	1.50
F-15	SPEEDER. Knurled Spin-Grip—16 1/2" long.....	2.10
		
F-103	EXTENSION BAR—3" long.....	1.08
F-110	EXTENSION BAR—6" long.....	1.08
F-115	EXTENSION BAR—9" long.....	1.20
F-117	EXTENSION BAR—12" long.....	1.20
	   <p>F-140 F-130, FS-131, FM-130 FP-2, FP-3, FP-4</p>	
F-140	UNIVERSAL JOINT.....	2.46
FS-130	ADAPTER—Adapts 3/8" sq. drive tools to fit 1/2" sq. drive sockets.....	1.02
FS-131	ADAPTER—Adapts 3/8" sq. drive sockets to fit 1/2" drive handles.....	1.02
FM-130	ADAPTER—Adapts 3/8" sq. drive tools to fit 1/4" sq. drive sockets.....	.90
FP-2	Phillips Screw Driver Socket Attachment—No. 2 Drive to fit screws Nos. 5 to 9 inclusive.....	1.25
FP-3	Phillips Screw Driver Socket Attachment—No. 3 Drive to fit screws Nos. 10 to 16 inclusive.....	1.25
FP-4	Phillips Screw Driver Socket Attachment—No. 4 Drive to fit No. 18 and larger.....	1.25

For a complete list of Reversible and Plug Connector Type Ratchets see page 180.

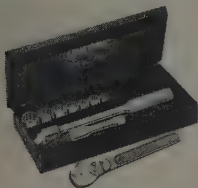


ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Light Series— $\frac{3}{8}$ " SQUARE DRIVE

These ARMSTRONG Socket Wrench Sets have been especially assembled for all light duty general service and to meet the requirements of aviation mechanics.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.



10 Pieces

GENERAL SERVICE SET NO. F-10

Seven sockets with drop forged, improved Reversible Ratchet, Flexible Hinge Handle and 3" Extension. This small set will handle a wide range of general service jobs.

Fits the following 19 sizes of hexagon nuts and cap screws, inclusive:

For American Standard:

Heavy (U.S.S.), Size Bolt— $\frac{1}{4}$, $\frac{3}{8}$
Cap Screws, Dia. Screw— $\frac{3}{16}$ to $\frac{1}{2}$
Light (SAE), Size Bolt— $\frac{1}{4}$ to $\frac{1}{2}$
Regular, Size Bolt— $\frac{1}{4}$ to $\frac{7}{16}$
Machine Screw No.—10, 12

LIST PRICE
Set No. F-10 Complete with Steel Case.....\$15.95
Approximate Weight 6 lbs.

CONTENTS

1 Each Double Hexagon Sockets, Nos.:
F-1212— $\frac{3}{8}$ " F-1220— $\frac{5}{8}$ "
F-1214— $\frac{7}{16}$ " F-1222— $\frac{11}{16}$ "
F-1216— $\frac{1}{2}$ " F-1224— $\frac{3}{4}$ "
F-1218— $\frac{9}{16}$ "

1 No. FA-51 Reversible Ratchet
1 No. F-40 Flexible Hinge Handle
1 No. F-103 Extension—3" Long

AVIATION SET NO. F-29

A complete assortment of $\frac{3}{8}$ " sq. drive sockets and tools.

Fits the following 31 sizes of hexagon and square nuts and cap screws, inclusive:

For American Standard:

Heavy (USS), Size Bolts
Hex.— $\frac{1}{4}$, $\frac{3}{8}$; Sq.— $\frac{1}{4}$
Cap Screws, Dia. Screw
Hex.— $\frac{3}{16}$ to $\frac{1}{2}$. Sq.— $\frac{5}{16}$ to $\frac{1}{2}$
Light (SAE), Size Bolt— $\frac{1}{4}$ to $\frac{1}{2}$
Regular, Size Bolt—Hex.— $\frac{1}{4}$ to $\frac{7}{16}$
Sq.— $\frac{1}{4}$ to $\frac{3}{8}$
Machine Screw No.—Hex.—10, 12.
Set Screws— $\frac{7}{16}$ to $\frac{5}{8}$



29 Pieces

LIST PRICE
Set No. F-29 Complete with Steel Case...\$47.70
Approximate Weight 9 $\frac{1}{2}$ lbs.

CONTENTS

1 Each Double Hexagon Regular Sockets, Nos.:
F-1212— $\frac{3}{8}$ " F-1216— $\frac{1}{2}$ " F-1222— $\frac{11}{16}$ "
F-1214— $\frac{7}{16}$ " F-1218— $\frac{9}{16}$ " F-1224— $\frac{3}{4}$ "
F-1220— $\frac{5}{8}$ "
1 Each Double Hexagon Flex Sockets, Nos.:
FX-1214— $\frac{7}{16}$ " FX-1218— $\frac{9}{16}$ "
FX-1216— $\frac{1}{2}$ " FX-1220— $\frac{5}{8}$ "
1 Each Double Hexagon Extra Deep Sockets, Nos.:
FD-1214— $\frac{7}{16}$ " FD-1218— $\frac{9}{16}$ " FD-1222— $\frac{11}{16}$ "
FD-1216— $\frac{1}{2}$ " FD-1220— $\frac{5}{8}$ " FD-1224— $\frac{3}{4}$ "

1 Each Double Square Extra Deep Sockets, Nos.:
FD-814— $\frac{7}{16}$ " FD-818— $\frac{9}{16}$ "
FD-816— $\frac{1}{2}$ " FD-820— $\frac{5}{8}$ "
1 No. FA-51 Reversible Ratchet
1 No. F-20A Sliding T Handle
1 No. F-40 Flexible Hinge Handle
1 No. F-15 Speeder—16 $\frac{1}{2}$ " long
1 No. F-103 Extension—3" long
1 No. F-110 Extension—6" long
1 No. F-115 Extension—10 $\frac{1}{2}$ " long
1 No. F-140 Universal Joint



ARMSTRONG ARMALLOY SOCKET WRENCHES

TORQUE WRENCHES

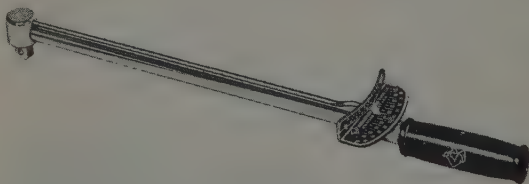
Standard Series— $\frac{1}{2}$ " Square Drive

The ARMSTRONG Torque Wrench is a positive deflection indicator for measuring the torque necessary to assemble or regulate equipment and installations in accordance with engineering recommendations.

Designed without moving parts or delicate mechanisms, these wrenches are manufactured to rigid specifications which ensure consistent accuracy at all times.

Compare these seven exclusive ARMSTRONG Torque Wrench features with other types of torque wrenches:

1. Clear, full view, two way dials, calibrated for right and left hand torque.
2. Special floating handle automatically fixes the correct point of load.
3. Accuracy unaffected by rough, hard service.
4. Slim, compact design for close quarter operation.



5. Spring steel pointer arm.
6. Precision taper-ground deflection beam.
7. No moving parts or delicate mechanisms.

ARMSTRONG Torque Wrenches are made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum precision. Finished in chrome-plate.

Each ARMSTRONG Torque Wrench is individually boxed. An Engineering Data Sheet is included.

No.	Capacity Foot Pound Range	Drive Size	Extreme Length Approx.	LIST PRICE Each	No.
ST-50	0-50	$\frac{1}{2}$ " Sq.	15 $\frac{3}{4}$	\$12.50	ST-50
ST-100	0-100	$\frac{1}{2}$ " Sq.	19 $\frac{3}{8}$	12.50	ST-100
ST-150	0-150	$\frac{1}{2}$ " Sq.	19 $\frac{3}{8}$	16.50	ST-150



ARMSTRONG ARMALOY SOCKET WRENCHES

Standard Series— $\frac{1}{2}$ " Square Drive



HEXAGON
Double Hexagon
(12 Point) Openings

These sockets are furnished with double broached openings, both hexagon and square. Slim head walls enable these sockets to operate with a sure grip in close or obstructed places. In close quarters, the double hexagon opening rotates the nut when the working arc is limited to only 30° .

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.



SQUARE
Double Square
(8 Point) Openings

No.	Nominal Opening	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	LIST PRICE Each	No.
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REGULAR HEXAGON SOCKETS

With Double Hexagon (12 Point) Openings

ST-1212	3/8		3/16			\$0.72	ST-1212
ST-1214	7/16		1/4		1/4	.72	ST-1214
ST-1216	1/2	1/4	5/16	1/4		.72	ST-1216
ST-1218	9/16		3/8	3/8	5/16	.72	ST-1218
*SF-1218	9/16		3/8	3/8	5/16	1.00	SF-1218
ST-1219	19/32	5/16				.72	ST-1219
ST-1220	5/8		7/16	7/16	3/8	.72	ST-1220
ST-1221	21/32					.72	ST-1221
ST-1222	11/16	3/8				.84	ST-1222
ST-1224	3/4		1/2	1/2	7/16	.90	ST-1224
ST-1225	25/32	7/16				.90	ST-1225
ST-1226	13/16		9/16		1/2	.90	ST-1226
ST-1228	7/8	1/2	5/8	9/16	9/16	.90	ST-1228
ST-1230	15/16			5/8		1.08	ST-1230
ST-1231	31/32	9/16				1.08	ST-1231
ST-1232	1		3/4		5/8	1.08	ST-1232
ST-1234	1 1/16	5/8		3/4		1.20	ST-1234
ST-1236	1 1/8		7/8		3/4	1.32	ST-1236
ST-1238	1 3/16					1.38	ST-1238
ST-1240	1 1/4	3/4		7/8		1.44	ST-1240

*Special Socket for
Ford and Mercury
Connecting Rods

REGULAR SQUARE SOCKETS

with Double Square (8 Point) Openings

†S-810	5/16					\$0.72	S-810
S-812	3/8					.72	S-812
S-814	7/16				1/4	.72	S-814
S-816	1/2	1/4				.72	S-816
S-818	9/16				5/16	.72	S-818
S-820	5/8				3/8	.72	S-820
S-822	11/16	3/8				.84	S-822
S-824	3/4				7/16	.90	S-824
S-828	7/8				9/16	.90	S-828
S-832	1				5/8	1.20	S-832

†Old Nos. S-1410 to S-1432.



ARMSTRONG ARMALLOY SOCKET WRENCHES

Standard Series—1/2" Square Drive



EXTRA DEEP
Double Hexagon
(12 Point) Openings

Extra deep sockets are furnished with openings 2 5/8" deep for spark plugs, body bolts, U bolts and for similar service wherever the bolt extends beyond the nut farther than usual.

Thin head walls allow these sockets to reach and grip the crowded or awkwardly placed nut. In close quarters, the double hexagon opening rotates the nut when the working arc is limited to only 30°.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

EXTRA DEEP SOCKETS

With Double Hexagon (12 Point) Openings

No.	Nominal Openings	For Amer. Std. HEAVY Nut (USS); Size Bolt	For Amer. Std. Hex Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut(SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	Extreme Length, Approx.	Outside Diam.	LIST PRICE Each	No.
SD-1216	1/2	1 4	5 16	5 16		3 1 4	49/64	\$1.14	SD-1216
SD-1218	9 16		3 8	3 8	5 16	3 1 4	27/32	1.14	SD-1218
SD-1220	5/8		7/16	7/16	3 8	3 1 4	15/16	1.26	SD-1220
SD-1222	11/16	3/8				3 1 4	1	1.26	SD-1222
SD-1224	3 4		1 2	1 2	7 16	3 1 4	1 1/32	1.26	SD-1224
SD-1226	13 16		9/16		1 2	3 1 4	1 9/64	1.26	SD-1226
SD-1228	7 8	1 2	5 8	9 16	9 16	3 1 4	1 7/32	1.26	SD-1228
SD-1228T	7 8	1 2	5 8	9 16	9 16	3 1 4	*	1.26	SD-1228T
SD-1230	15/16			5/8		3 1 4	1 5/16	1.38	SD-1230
SD-1232	1		3/4		5/8	3 1 4	1 21/64	1.50	SD-1232
SD-1234	1 1/16	5 8		3 4		3 1 4	1 7/16	1.50	SD-1234
SD-1236	1 1/8		7 8		3/4	3 1 4	1 1/2	1.68	SD-1236

*Extra thin wall not guaranteed.

FLEX SOCKETS

With Double Hexagon (12 Point) Openings

These universal joint Flex Sockets will operate within a range of about 130° angle with any 1/2" Sq. Drive Tool and are indispensable on many jobs in obstructed places.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.



FLEX

Double Hexagon (12
Point) Openings

FLEX SOCKETS

With Double Hexagon (12 Point) Openings

SX-1216	1/2	1 4	5/16	5/16		\$2.25	SX-1216
SX-1218	9/16		3/8	3/8	5/16	2.25	SX-1218
SX-1220	5/8		7/16	7/16	3/8	2.40	SX-1220
SX-1222	11/16	3 8				2.40	SX-1222
SX-1224	3/4		1 2	1 2	7/16	2.40	SX-1224




ARMSTRONG ARMALLOY SOCKET WRENCHES

Standard Series—1/2" Square Drive

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

DRIVE TOOLS

No.	Description	LIST PRICE EACH
SA-51	<p>REVERSIBLE RATCHET—can be instantly reversed by snapping the reversing lever to position ON or position OFF. This feature is particularly convenient for close quarter operations. The ratchets will rotate the socket where the working arc is limited to only 15°. All parts are made entirely of alloy and high tensile steel, carefully heat treated to maximum strength. Length 10 1/2".....</p>  <p>SA-51 Drop Forged Reversible Ratchet</p>	\$6.75
S-30	 <p>S-30</p>	2.10
S-20A	 <p>S-20A</p>	1.25
S-40	<p>SLIDING T HANDLE—11" long.....</p>	
S-30	<p>OFFSET HANDLE—12" long.....</p>	
	 <p>May be used as extension. Knurled handle drilled for 1/2" Dia. Sliding Bar.</p>	
S-40	<p>FLEXIBLE HINGE HANDLE—12" long.....</p>	3.90
S-41	<p>FLEXIBLE HINGE HANDLE—17" long.....</p>	4.50
S-42B	<p>SLIDING BAR—1/2" dia. x 12" long.....</p>	.60
	 <p>S-10 S-15</p>	
S-10	<p>S-110P, S-115P, S-121P</p> <p>SPEEDER with knurled spin grip—14 1/2" long.....</p>	2.70
S-15	<p>SPEEDER with knurled spin grip—19 1/2" long.....</p>	2.70
S-110P	<p>EXTENSION—5 1/4" long.....</p>	1.20
S-115P	<p>EXTENSION—10 1/2" long.....</p>	1.65
S-121P	<p>EXTENSION—20" long.....</p>	1.90
	   <p>S-140 SH-130, SH-131 SB-30 SB-40</p>	
S-140	<p>UNIVERSAL JOINT.....</p>	2.70
SH-130	<p>ADAPTER Adapts 1/2" sq. drive tools to fit 3/4" sq. drive sockets.....</p>	1.20
SH-131	<p>ADAPTER—Adapts 3/4" sq. drive tools to fit 1/2" sq. drive sockets.....</p>	1.35
SB-30	<p>SCREW DRIVER—Blade 7/64"x 15/16".....</p>	1.02
SB-40	<p>SCREW DRIVER—Blade 3/32"x1 1/4".....</p>	1.38

For a complete list of Reversible and Plug Connector Type Ratchets see page 180.



ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Standard Series—1/2" Square Drive

These ARMSTRONG Socket Wrench Sets offer a compact assortment of the most necessary tools in the popular 1/2" square drive Standard Series.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

FLEX SET NO. S-11



11 Pieces

LIST PRICE

Set No. S-11 Complete with Steel

Case. **\$15.80**

Approximate Weight 5 lbs.

A basic set of 10 Sockets and a Flexible Hinge Handle.

Fits the following 25 sizes of hexagon nuts and cap screws, inclusive:

For American Standard:

Heavy (USS), Size Bolt—1/4 to 1/2

Cap Screws, Dia. Screw—1/4 to 3/4

Light (SAE), Size Bolt—1/4 to 11/16

Regular, Size Bolt—1/4 to 5/8

CONTENTS

1 Each Double Hexagon Regular Sockets, Nos.:

ST-1214— 7/16"	ST-1222—11/16"
ST-1216— 1/2"	ST-1224— 3/4"
ST-1218— 9/16"	ST-1225—25/32"
ST-1219—19/32"	ST-1228— 7/8"
ST-1220— 5/8"	ST-1232—1"

1 No. S-41 Flexible Hinge Handle, 17" long. Operates at any angle within 180°.

RATCHET SET NO. S-11R

Contains 10 popular sizes of sockets and the Improved ARMSTRONG Reversible Ratchet.

Fits the following 25 sizes of hexagon nuts and cap screws, inclusive:

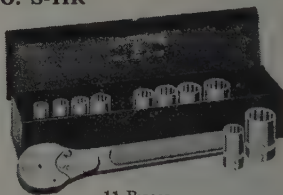
For American Standard:

Heavy (USS), Size Bolt—1/4 to 1/2

Cap Screws, Dia. Screw—1/4 to 3/4

Light (SAE), Size Bolt—1/4 to 11/16

Regular, Size Bolt—1/4 to 5/8



11 Pieces

LIST PRICE

Set No. S-11R Complete with Steel

Case. **\$17.60**

Approximate Weight 4 1/2 lbs.

CONTENTS

1 Each Double Hexagon Regular Sockets, Nos.:

ST-1214— 7/16"	ST-1222—11/16"
ST-1216— 1/2"	ST-1224— 3/4"
ST-1218— 9/16"	ST-1225—25/32"
ST-1219—19/32"	ST-1228— 7/8"
ST-1220— 5/8"	ST-1232—1"

1 No. SA-51 Reversible Ratchet 10 1/2" long. Can be instantly reversed by snapping reversing lever to position on or off.



ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Standard Series—1/2" Square Drive

These are sets of carefully selected ARMSTRONG Socket Wrenches for general service.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.

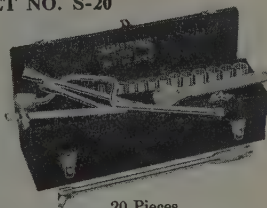
GENERAL SERVICE SET NO. S-20

Set consists of 13 Double Hexagon Regular Sockets with Reversible Ratchet and 6 other necessary Drive Tools.

Fits the following 29 sizes of hexagon nuts and cap screws, inclusive:

For American Standard:

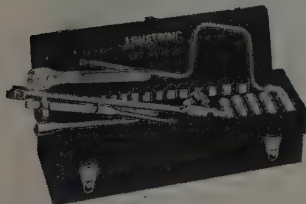
Heavy (USS), Size Bolt—1/4 to 9/16
Cap Screws, Dia. Screw—1/4 to 3/4
Light (SAE), Size Bolt—1/4 to 11/16
Regular, Size Bolt—1/4 to 5/8



20 Pieces

LIST PRICE
Set No. S-20 Complete
with Steel Case **\$45.90**
Approximate Weight 23 lbs.

GENERAL SERVICE SET NO. S-25



25 Pieces

LIST PRICE
Set No. S-25 Complete with Steel
Case **\$52.70**
Approximate Weight 25 1/2 lbs.

This set includes the same assortment as Set No. S-20, with 5 Double Hexagon Extra Deep Sockets added.

Fits the following 31 sizes of hexagon nuts and cap screws, inclusive:

For American Standard:

Heavy (USS), Size Bolt—1/4 to 9/16
Cap Screws, Dia. Screw—1/4 to 7/8
Light (SAE), Size Bolt—1/4 to 11/16
Regular, Size Bolt—1/4 to 3/4

CONTENTS OF SETS

1 Each Double Hexagon Regular Sockets, Nos.:

ST-1214—7/16"	ST-1224—3/4"
ST-1216—1/2"	ST-1225—25/32"
ST-1218—9/16"	ST-1226—13/16"
ST-1219—19/32"	ST-1228—7/8"
ST-1220—5/8"	ST-1230—15/16"
ST-1222—11/16"	ST-1231—31/32"
	ST-1232—1"

1 Each Double Hexagon Extra Deep Sockets, Nos.:

*SD-1222—11/16"
*SD-1226—13/16"

*SD-1228T—7/8"

*SD-1230—15/16"

*SD-1236—1 1/8"

*Omitted from Set No. S-20

1 No. SA-51 Reversible Ratchet
1 No. S-41 Flexible Hinge Handle
1 No. S-20A Sliding T Handle
1 No. S-15 Speeder—19 1/2" long
1 No. S-110P Extension—5 1/4" long
1 No. S-115P Extension—10 1/2" long
1 No. S-140 Universal Joint



ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Standard Series—1/2" Square Drive

These ARMSTRONG Socket Wrench Sets include a complete assortment of 1/2" Square Drive Sockets and Drive Tools.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome-plate.



29 Pieces

Set No. S-29 Complete with Steel Case . \$54.80
Approximate Weight 25 1/2 lbs.

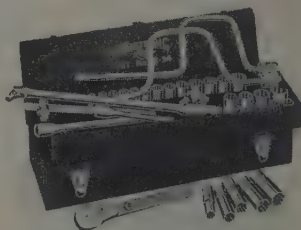
MASTER SET NO. S-34

This set includes the same assortment as Set No. S-29 with 5 Double Hexagon Extra Deep Sockets added.

Fits the following 31 sizes of hexagon nuts and cap screws, inclusive:

For American Standard:

Heavy (USS), Size Bolt—1/4 to 9/16
Cap Screws, Dia. Screw—1/4 to 7/8
Light (SAE), Size Bolt—1/4 to 11/16
Regular, Size Bolt—1/4 to 3/4



34 Pieces

Set No. S-34 Complete with Steel Case \$62.15
Approximate Weight 27 3/4 lbs.

CONTENTS OF SETS

1 Each Double Hexagon Regular Sockets, Nos.:

ST-1214 - 7/16"	ST-1224 - 3/4"
ST-1216 - 1/2"	ST-1225 - 25/32"
ST-1218 - 9/16"	ST-1226 - 13/16"
ST-1219 - 19/32"	ST-1228 - 7/8"
ST-1220 - 5/8"	ST-1230 - 15/16"
ST-1222 - 11/16"	ST-1231 - 31/32"
ST-1232 - 1"	

1 Each Double Square Sockets, Nos.:

S-812 - 3/8"	S-820 - 5/8"
S-814 - 7/16"	S-822 - 11/16"
S-816 - 1/2"	S-824 - 3/4"
S-818 - 9/16"	S-828 - 7/8"

1 Each Double Hexagon Extra Deep Sockets, Nos.:

*SD-1222 - 11/16"	*SD-1230 - 15/16"
*SD-1226 - 13/16"	*SD-1236 - 1 1/8"
*SD-1228T - 7/8"	*Omitted from Set No. S-29

PARTS

- 1 No. 8A-51 Reversible Ratchet
- 1 No. 8-41 Flexible Hinge Handle
- 1 No. 8-20A Sliding T Handle
- 1 No. 8-10 Speeder—14 1/2" long
- 1 No. 8-15 Speeder—19 1/2" long
- 1 No. 8-110P Extension—5 1/4" long
- 1 No. 8-115P Extension—10 1/2" long
- 1 No. 8-140 Universal Joint



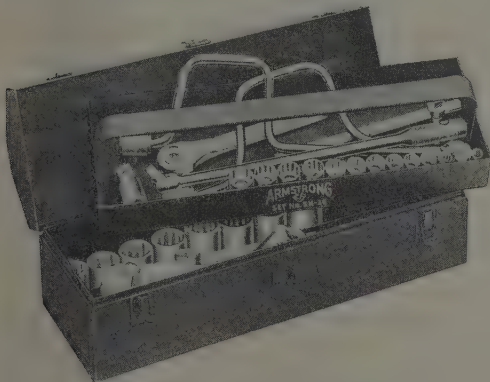
ARMSTRONG ARMALOY SOCKET WRENCH SETS

Standard and Heavy Duty Series
1/2" SQUARE DRIVE—3/4" SQUARE DRIVE

SUPER-MECHANICS' SET NO. S-H-36

The ARMSTRONG Super-Mechanics' Set No. S-H-36 is a complete and compact assortment of Standard Series 1/2" Square Drive and Heavy Duty Series 3/4" Square Drive Sockets and Drive Tools in a practical steel case. All truck and bus service stations, machinery erectors and maintenance mechanics require the tools in this combination set.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. All Standard Series Sockets and Drive Tools are finished in Chrome-plate; Heavy Duty Series finished in Cadmium-plate.



Fits the following 42 sizes of Hexagon nuts and cap screws, inclusive:

For American Standard:

Heavy (USS), Size Bolt—1/4 to 1
Cap Screws, Dia. Screw—1/4 to 1 1/8
Light (SAE), Size Bolt—1/4 to 1 1/8
Regular, Size Bolt—1/4 to 1

36 Pieces

Set No. S-H-36

LIST PRICE

Complete with Steel Case.....\$99.55

Approx. Wgt. 43 1/2 lbs.

CONTENTS

1 Each Double Hexagon Regular Sockets, Nos.:

Standard Series—1/2" Square Drive.

ST-1214—7/16"	ST-1224—3/4"
ST-1216—1/2"	ST-1225—25/32"
ST-1218—9/16"	ST-1226—13/16"
ST-1219—19/32"	ST-1228—7/8"
ST-1220—5/8"	ST-1230—15/16"
ST-1222—11/16"	ST-1231—31/32"
	ST-1232—1"

Heavy Duty Series—3/4" Square Drive

H-1234—1 1/16"	H-1244—1 3/8"
H-1236—1 1/8"	H-1246—1 7/16"
H-1240—1 1/4"	H-1248—1 1/2"
H-1242—1 5/16"	H-1252—1 5/8"

DRIVE TOOLS AND PARTS

Standard Series—1/2" Square Drive

- 1 No. SA-51 Reversible Ratchet
- 1 No. S-41 Flexible Hinge Handle
- 1 No. S-20 A Sliding T Handle
- 1 No. S-10 Speeder—14 1/2" long
- 1 No. S-15 Speeder—19 1/2" long
- 1 No. S-110P Extension—5 1/4" long
- 1 No. S-115P Extension—10 1/2" long
- 1 No. S-140 Universal Joint
- 1 No. SH-130 Adapter—Adapts 1/2" Square Drive Tools to fit 3/4" Square Drive Sockets.

Heavy Duty Series—3/4" Square Drive

- 1 No. H-51 Reversible Ratchet
- 1 No. H-20A Sliding T Handle
- 1 No. H-110 Extension—8" long
- 1 No. H-115 Extension—15 1/2" long
- 1 No. H-140 Universal Joint
- 1 No. SH-131 Adapter—Adapts 3/4" Square Drive Tools to fit 1/2" Square Drive Sockets.

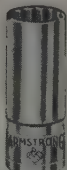


ARMSTRONG ARMALLOY SOCKET WRENCHES

Heavy Duty Series— $\frac{3}{4}$ " Square Drive



Regular
Double Hexagon (12 Point)
Openings



Extra Deep

These sockets are designed for heavy duty service where reliable strength without unnecessary weight is required.

The extra deep sockets are used on heavy U bolts found on trucks and busses and on other jobs where the bolt protrudes beyond the nut farther than usual.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Cadmium plate.

No.	Nominal Opening	For Amer. Std. Heavy Nut (USS); Size Bolt	For Amer. Std. Hex. Head Cap Screw; Dia. Screw	For Amer. Std. LIGHT Nut (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	LIST PRICE Each	No.
-----	--------------------	--	--	--	---	-----------------------	-----

Regular Hexagon Sockets

With Double Hexagon (12 Point) Openings

H-1228	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{9}{16}$	$\frac{9}{16}$	\$1.08	H-1228
H-1230	$\frac{15}{16}$			$\frac{5}{8}$		1.08	H-1230
H-1231	$\frac{31}{32}$	$\frac{9}{16}$				1.08	H-1231
H-1232	1		$\frac{3}{4}$		$\frac{5}{8}$	1.08	H-1232
H-1234	1 $\frac{1}{16}$	$\frac{5}{8}$		$\frac{3}{4}$		1.32	H-1234
H-1236	1 $\frac{1}{8}$		$\frac{7}{8}$		$\frac{3}{4}$	1.38	H-1236
H-1238	1 $\frac{3}{16}$					1.38	H-1238
H-1240	1 $\frac{1}{4}$	$\frac{3}{4}$		$\frac{7}{8}$		1.56	H-1240
H-1242	1 $\frac{5}{16}$		1		$\frac{7}{8}$	1.56	H-1242
H-1244	1 $\frac{3}{8}$					1.56	H-1244
H-1246	1 $\frac{7}{16}$	$\frac{7}{8}$		1		1.86	H-1246
H-1248	1 $\frac{1}{2}$		1 $\frac{1}{8}$		1	1.86	H-1248
H-1252	1 $\frac{5}{8}$	1		1 $\frac{1}{8}$		2.16	H-1252
H-1254	1 $\frac{11}{16}$		1 $\frac{1}{4}$		1 $\frac{1}{8}$	2.70	H-1254
H-1256	1 $\frac{3}{4}$					2.70	H-1256
H-1258	1 $\frac{13}{16}$	1 $\frac{1}{8}$		1 $\frac{1}{4}$		2.95	H-1258
H-1260	1 $\frac{7}{8}$				1 $\frac{1}{4}$	2.95	H-1260
H-1264	2	1 $\frac{1}{4}$		1 $\frac{3}{8}$		3.50	H-1264
H-1266	2 $\frac{1}{16}$				1 $\frac{3}{8}$	4.10	H-1266
H-1268	2 $\frac{1}{8}$					4.40	H-1268
H-1270	2 $\frac{3}{16}$	1 $\frac{3}{8}$		1 $\frac{1}{2}$		4.70	H-1270
H-1272	2 $\frac{1}{4}$				1 $\frac{1}{2}$	5.30	H-1272

Note:—Openings 1 $\frac{3}{16}$, 1 $\frac{3}{4}$ and 2 $\frac{1}{8}$ fit Mfrs. Std. Boltheads, sizes $\frac{3}{4}$, 1 $\frac{1}{8}$ and 1 $\frac{3}{8}$ respectively.

Extra Deep Sockets

With Double Hexagon (12 Point) Openings

(Length O/A)

HD-1230	$\frac{15}{16}$			$\frac{5}{8}$	3 $\frac{1}{4}$	\$1.62	HD-1230
HD-1234	1 $\frac{1}{16}$	$\frac{5}{8}$		$\frac{3}{4}$	3 $\frac{1}{4}$	1.86	HD-1234
HD-1240	1 $\frac{1}{4}$	$\frac{3}{4}$		$\frac{7}{8}$	3 $\frac{1}{4}$	2.28	HD-1240
HD-1246	1 $\frac{7}{16}$	$\frac{7}{8}$		1	3 $\frac{1}{2}$	2.52	HD-1246

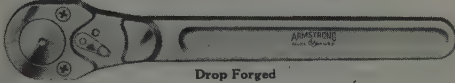

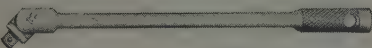
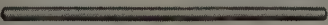






ARMSTRONG
ARMALLOY SOCKET WRENCHES

Heavy Duty Series— $\frac{3}{4}$ " Square Drive

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Cadmium-plate.

DRIVE TOOLS

No.	Description	LIST PRICE EACH
	 Drop Forged	
HA-51	REVERSIBLE RATCHET—can be instantly reversed by snapping the reversing lever to position ON or position OFF. This feature is particularly convenient for close quarter operations. The ratchets will rotate the socket where the working arc is limited to only 15°. All parts are made entirely of alloy and high tensile steel, carefully heat treated to maximum strength. Length 19".....	\$11.50
		
H-20A	SLIDING T HANDLE—17 1/2" long.....	3.30
		
H-41	FLEXIBLE HINGE HANDLE—22" long. Drilled for sliding bar....	6.15
		
HX-41B	SLIDING BAR—5/8"x16" for No. H-41.....	1.10
		
H-104	EXTENSION BAR—4" long.....	1.95
H-110	EXTENSION BAR—8" long.....	2.70
H-115	EXTENSION BAR—15 1/2" long.....	3.30
	 H-140  H-150  HX-130	
H-140	UNIVERSAL JOINT.....	7.50
H-150	RATCHET PLUG CONNECTOR.....	1.20
HX-130	ADAPTER—Adapts 3/4" sq. drive handles to fit 1" sq. drive sockets.....	1.50

For a complete list of Reversible and Plug Connector Type Ratchets see page 180.



ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Heavy Duty Series— $\frac{3}{4}$ " Square Drive

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Cadmium-plate.

HEAVY SERVICE SETS NOS. H-15 AND H-13



15 Pieces, Illustrated

Set No. H-15 Complete with
Steel Case.....**\$57.30**

Approximate Weight 28 $\frac{3}{4}$ lbs.

13 Pieces

Set No. H-13 Complete with
Steel Case.....**\$38.65**

Approximate Weight 22 $\frac{1}{4}$ lbs.

This set does not include No. HA-51 Ratchet
or No. H-140 Universal Joint. See Contents.

These heavy duty sets are especially assembled for industrial maintenance mechanics and for servicing tractors, busses and trucks. The sockets and drive tools are designed for severe service and in proportion to their strength they are exceptionally easy to handle.

Sets fit the following sizes of hexagon nuts and cap screws:

For American Standard:

Heavy (USS), Size Bolt—5/8, 3/4, 7/8, 1
Cap Screws, Dia. Screw—7/8, 1, 1 1/8
Light (SAE), Size Bolt—3/4, 7/8, 1, 1 1/8
Regular, Size Bolt—3/4, 7/8, 1

CONTENTS

1 Each Double Hexagon Sockets, Nos.:

H-1234—1 1/16"	H-1244—1 3/8"
H-1236—1 1/8"	H-1246—1 7/16"
H-1238—1 3/16"	H-1248—1 1/2"
H-1240—1 1/4"	H-1252—1 5/8"
H-1242—1 5/16"	H-1256—1 3/4"

DRIVE TOOLS AND PARTS

*1 No. HA-51 Reversible Ratchet
1 No. H-20A Sliding T Handle
1 No. H-110 Extension—8" long
1 No. H-115 Extension—15 1/2" long
*1 No. H-140 Universal Joint

*Omitted from Set No. H-13.



ARMSTRONG ARMALLOY SOCKET WRENCHES

Extra Heavy Duty Series—1" Square Drive



These socket wrenches are designed for the most severe service where extra strength is required.

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Cadmium-plate.

Extra Heavy Duty
Double Hexagon (12
Point) Openings

SOCKETS

No.	Nominal Opening	For Amer. Std. HEAVY Nuts (USS); Size Bolt	For Amer. Std. Hex. Head Cap Screw; Dia. Screws	For Amer. Std. LIGHT Nuts (SAE); Size Bolt	For Amer. Std. REGULAR Nut; Size Bolt	LIST PRICE Each	No.
X-1234	1 1/16	5/8		3/4		\$1.80	X-1234
X-1236	1 1/8		7/8		3/4	1.80	X-1236
X-1240	1 1/4	3/4		7/8		1.98	X-1240
X-1244	1 3/8					2.10	X-1244
X-1246	1 7/16	7/8		1		2.22	X-1246
X-1248	1 1/2		1 1/8		1	2.70	X-1248
X-1252	1 5/8	1		1 1/8		3.00	X-1252
X-1258	1 13/16	1 1/8		1 1/4		4.20	X-1258
X-1260	1 7/8				1 1/4	4.60	X-1260
X-1264	2	1 1/4		1 1/8		4.80	X-1264
X-1268	2 1/8					5.80	X-1268
X-1270	2 3/16	1 3/8		1 1/2		6.30	X-1270
X-1272	2 1/4				1 1/2	6.90	X-1272
X-1276	2 3/8	1 1/2				7.50	X-1276
X-1280	2 1/2					10.50	X-1280
X-1282	2 9/16	1 5/8				12.00	X-1282
X-1284	2 5/8				1 3/4	13.50	X-1284
X-1288	2 3/4	1 3/4				16.50	X-1288
X-1294	2 15/16	1 7/8				17.00	X-1294
X-12100	3 1/8	2				20.00	X-12100

Note:—Openings 1 3/8, 2 1/8, and 2 1/2 fit Mfrs. Std. Bolt Heads, sizes 7/8, 1 3/8 and 1 5/8 respectively.



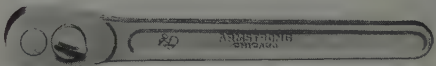

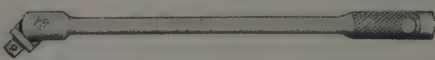
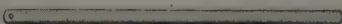

ARMSTRONG ARMALLOY SOCKET WRENCHES

Extra Heavy Duty Series—1" Square Drive

These socket wrenches are designed for the most severe service where extra strength is required.

Made from a selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Cadmium-plate.

DRIVE TOOLS

No.	Description	LIST PRICE EACH
		
	Drop Forged	
X-51	REVERSIBLE RATCHET—can be instantly reversed by snapping the reversing lever to position ON or position OFF. This feature is particularly convenient for close quarter operations. The ratchets will rotate the socket where the working arc is limited to only 15°. All parts are made entirely of alloy and high tensile steel, carefully heat treated to maximum strength. Length 20 1/2".....	\$32.50
		
X-20A	SLIDING T HANDLE—20" long.....	4.85
		
X-41	FLEXIBLE HINGE HANDLE—27" long. Drilled for sliding bar....	15.50
		
HX-41B	SLIDING BAR—5/8"x16". For No. X-41.....	1.10
		
X-110	EXTENSION BAR—9" long.....	5.25
X-115	EXTENSION BAR—18" long.....	6.40
X-150	RATCHET PLUG CONNECTOR.....	1.68

For a complete list of Reversible and Plug Connector Type Ratchets see page 180.



ARMSTRONG ARMALLOY SOCKET WRENCH SETS

Extra Heavy Duty Series—1" Square Drive

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Cadmium-plate.

EXTRA HEAVY SERVICE SETS NO. X-15 AND X-9



15 Pieces

LIST PRICE

Set No. X-15 (illustrated)
Complete with Steel Case **\$102.75**
Approximate Weight 53 lbs.

9 Pieces

LIST PRICE

Set No. X-9 Complete with
Steel Case **\$54.35**
Approximate Weight 32 lbs.

These sets are especially recommended for servicing trucks and busses as well as for general work requiring extra heavy duty tools for severe service.

Set No. X-15 (illustrated) fits the following 21 sizes of hexagon nuts and cap screws, inclusive:

For American Standard:

Heavy (USS), Size Bolt—5/8 to 1 1/2
Cap Screws, Dia. Screw—7/8 to 1 1/4
Light (SAE), Size Bolt—3/4 to 1 1/2
Regular, Size Bolt—3/4 to 1 1/8

CONTENTS

1 Each Double Hexagon Sockets, Nos.:

*X-1234—1 1/16"	X-1252—1 5/8"
*X-1236—1 1/8"	X-1258—1 13/16"
X-1240—1 1/4"	X-1264—2"
*X-1244—1 3/8"	X-1270—2 3/16"
X-1246—1 7/16"	X-1276—2 3/8"
*X-1248—1 1/2"	

DRIVE TOOLS AND PARTS

*1 No. X-51 Reversible Ratchet
1 No. X-20A Sliding T Handle
1 No. X-110 Extension—9" long
*1 No. X-115 Extension—18" long

* Omitted from set X-9



ARMSTRONG ARMALLOY COMPLETE ASSORTMENT

"STEP-SAVER" SET NO. NM-H-83

Made from selected grade alloy steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in Chrome and Cadmium plate.



83 Pieces

Set No. NM-H-83—List Price \$202.00

Complete with Steel Chest

Approx. Weight 69 lbs.

This set contains a complete assortment of 1/4", 3/8", 1/2" and 3/4" Square Drive ARMSTRONG Armalloy Sockets and Drive Tools and a carefully selected assortment of Tappet Wrenches, 12 Point Box Socket Wrenches, Pliers and Hammerhead Screwdriver. Included are all required openings from 3/16" to 1 5/8", fitting 58 sizes of hexagon bolts, nuts and cap screws.

The steel chest furnished with this complete assortment is specially constructed for maximum strength and convenience.

For list of contents see page 179.



ARMSTRONG ARMALOY COMPLETE ASSORTMENT

"STEP-SAVER" SET NO. NM-H-83

(Continued from page 178)

LIST OF CONTENTS

1 Each Sockets

No.	Nominal Opening	Amer. Std. HEAVY Nut (USS)	Amer. Std. Hex. Hd. Cap Screw	Amer. Std. LIGHT Nut (SAE)	Amer. Std. REGULAR Nuts
Regular Hexagon—6 Point—1/4" Square Drive					
NM-606	3/16				Mch. Scr. No. 2 & 3
NM-607	7/32				4
NM-608	1/4				
NM-609	9/32				

Regular Hexagon—12 Point—1/4" Square Drive					
NM-1210	5/16	1/8	1/8		5 & 6
NM-1211	11/32				8
NM-1212	3/8		3/16		10
NM-1214	7/16		1/4	1/4	12 & 1/4

Regular Hexagon—12 Point—3/8" Square Drive					
F-1212	3/8		3/16		
F-1214	7/16		1/4	1/4	1/4
F-1216	1/2	1/4	5/16	5/16	
F-1218	9/16		3/8	3/8	5/16
F-1220	5/8		7/16	7/16	3/8
F-1222	11/16	3/8			
F-1224	3/4		1/2	1/2	7/16

Regular Hexagon—12 Point—1/2" Square Drive					
ST-1214	7/16		1/4	1/4	1/4
ST-1216	1/2	1/4	5/16	5/16	
ST-1218	9/16		3/8	3/8	5/16
ST-1219	19/32	5/16			
ST-1220	5/8		7/16	7/16	3/8
ST-1222	11/16	3/8			
ST-1224	3/4		1/2	1/2	7/16
ST-1225	25/32	7/16			
ST-1226	13/16		9/16		1/2
ST-1228	7/8	1/2	5/8	9/16	9/16
ST-1230	15/16			5/8	
ST-1231	31/32	9/16			
ST-1232	1		3/4	11/16	5/8

Extra Deep Hexagon—12 Point—1/2" Square Drive					
SD-1226	13/16		9/16		1/2
SD-1228T	7/8				
SD-1232	1		5/8		
SD-1236	1 1/8		7/8		3/4

Regular Square—8 Point—1/2" Square Drive					
S-816	1/2				
S-818	9/16				9/16

Socket Bits

SB-30	* 15/16				
SB-40	* 1 1/4				

Regular Hexagon—12 Point—3/4" Square Drive					
H-1234	1 1/16	5/8		3/4	
H-1236	1 1/8		7/8		3/4
H-1240	1 1/4	3/4		7/8	
H-1242	1 5/16		1		7/8
H-1244	1 3/8				
H-1246	1 7/16	7/8		1	
H-1248	1 1/2		1 1/8		1
H-1252	1 5/8	1		1 1/8	

1 Each Drive Tools and Wrenches

No.	Description
1/4" Square Drive	
NM-20-A	Sliding T Handle—4 1/2" long
NM-110	Extension-Driver—5 1/2" long

3/8" Square Drive	
FA-51	Reversible Ratchet—7" long
F-20A	Sliding T Handle—6 1/2" long
F-40	Flexible Hinge Handle—8 1/2" long
F-15	Speeder—16 1/2" long
F-110	Extension—6" long
F-115	Extension—10 1/2" long
F-140	Universal Joint

1/2" Square Drive	
SA-51	Reversible Ratchet—10 1/2" long
S-20A	Sliding T Handle—11" long
S-41	Flexible Hinge Handle—17" long
S-10	Speeder—14 1/2" long
S-15	Speeder—19 1/2" long
S-110P	Extension—5 1/4" long
S-115P	Extension—10 1/2" long
S-140	Universal Joint

3/4" Square Drive	
HA-51	Reversible Ratchet—19" long
H-20A	Sliding T Handle—17 1/2" long
H-110	Extension—8" long
H-115	Extension—15 1/2" long
H-140	Universal Joint

Tappet Wrenches	
1090-D	Openings 1/2"-9/16"—8" long
1090-D	
1092-F	Openings 5/8"-11/16"—8 1/2" long
1092-F	
1094	Openings 3/4"-7/8"—9" long
1094	

Box Socket Wrenches	
7723	3/8 & 7/16—7 3/8"
7025	1/2 & 19/32—8 1/4"
7727	9/16 & 5/8—9 1/4"
7731A	3/4 & 7/8—12"
7033C	15/16 & 1—13 3/4"
9723	3/8 & 7/16—4 1/2"
9725	7/16 & 1/2—5 1/2"
9727	9/16 & 5/8—6"

Pliers and Screwdriver	
1519	Pliers, 4 1/2"; 4 position slip-joint
1520	Pliers, 9 1/2"; 8 position slip-joint
1997	Hammerhead Screwdriver

* Width of Blade.



ARMSTRONG ARMALLOY SOCKET WRENCHES

REVERSIBLE RATCHETS

Drop Forged Steel—Improved Design

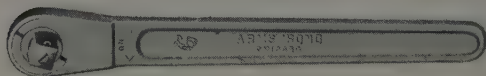


These Improved Reversible Ratchets can be instantly reversed by snapping the reversing lever to position ON or position OFF. This feature is particularly convenient for close quarter operations. The ratchets will rotate the socket where the working arc is limited to only 15°. All parts are made entirely of alloy and high tensile steel, carefully heat treated to maximum strength. Finished in Chrome over Nickel with heads buffed bright.

No.	LIST PRICE Each	Series	Drive	Extreme Length Approx.
NMA-51	\$ 2.75	Miniature	1/4" Square	4 1/2
FA-51	4.50	Light	3/8" Square	7
SA-51	6.75	Standard	1/2" Square	10 1/2
HA-51	11.50	Heavy Duty	3/4" Square	19
X-51	32.50	Extra Heavy Duty	1" Square	20 1/2

RATCHETS—PLUG CONNECTOR TYPE

Drop Forged Steel



These Ratchets will rotate the sockets where the working arc is limited to only 15°. In this style, turning the Ratchet over reverses its action. All Ratchets as listed below are furnished with removable plug connectors. All parts are accurately made of alloy and high tensile steel, heat treated to maximum strength. Finished in Chrome over Nickel with heads buffed bright.

No.	LIST PRICE Each	Series	Drive	Extreme Length Approx.
F-50	\$ 3.60	Light	3/8" Square	6 1/2
S-50	4.50	Standard	1/2" Square	10 1/2
H-50	10.50	Heavy Duty	3/4" Square	18 1/2
X-50	16.20	Extra Heavy Duty	1" Square	20 1/2



ARMSTRONG REVERSIBLE RATCHET SOCKET WRENCHES

For Bridge, Structural and Erecting Work



Hex Sockets



Square Sockets



ARMSTRONG Reversible Ratchet Socket Wrenches are built for speed and ruggedness such as is needed in bridge, structural and erecting work. By simply switching the shifting lever these wrenches are instantly reversible while in action. The open spindle and socket allow the bolt to pass through the socket and ratchet head. Consequently nuts can be run for any distance along a bolt and securely set with a minimum of time and effort.

The Handle or wrench is drop forged of selected steel and heat treated to assure maximum strength. No castings are used in this wrench. The gears are machined from solid selected steel and properly hardened. All parts are of steel and wearing parts are hardened. Each wrench is finished in cadmium plate.

ARMSTRONG Sockets for use with ARMSTRONG Reversible Ratchet Socket Wrenches are furnished in square and hexagon patterns—openings from 1 to 3 1/8". All are machined from a solid selected steel and properly hardened. Finished in cadmium plate.

When ordering Wrenches and Sockets please order by catalog number.

RATCHET WRENCHES ONLY

	LIST PRICE EACH
No. 2-BR Wrench only, without socket, length of handle approx. 24"	\$20.00
Hexagon and Square Sockets (any size) for No. 2-BR Ratchet.	6.00
No. 3-BR Wrench only, without socket, length of handle approx. 36"	40.00
Hexagon and Square Sockets (any size) for No. 3-BR Ratchet.	12.00

HEXAGON AND SQUARE SOCKETS

For No. 2-BR Ratchet			For No. 3-BR Ratchet		
Nominal Opening Size Across Flats	Socket Number		Nominal Opening Size Across Flats	Socket Number	
	Hexagon	Square		Hexagon	Square
1	8661	8681	1 5/8	8721	8701
1 1/16	8662	8682	1 13/16	8722	8702
1 1/8	8663	8683	2	8723	8703
1 1/4	8664	8684	2 3/16	8724	8704
1 5/16	8665	8685	2 1/4	8725	
1 3/8	8666	8686	2 3/8	8726	8705
1 7/16	8667	8687	2 9/16	8727	8706
1 1/2	8668	8688	2 3/4	8728	8707
1 5/8	8669	8689	2 15/16	8729	8708
1 13/16	8670	8690	3	8730	8709
1 7/8	8671	8691	3 1/8	8731	8710
2	8672	8692			
2 3/16	8673				

BRIDGE RATCHET SET No. BR-12



List Price, Complete \$86.00

12 Pieces

In Wooden Box, Bridge Ratchet Wrench 2-BR and 11 Sockets:

7 Hex—1 1/16, 1 1/4, 1 7/16, 1 5/8, 1 13/16, 2 and 2 3/16".

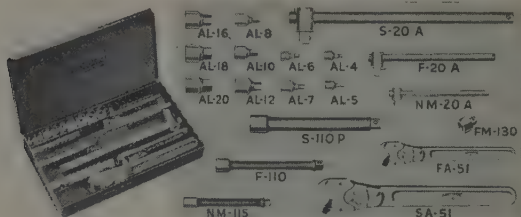
4 Square—1 1/16, 1 1/4, 1 7/16 and 1 5/8 inches.



ARMSTRONG ARMALLOY HOLLOW SCREW WRENCHES

Sets Nos. AL-100 and AL-50

ARMSTRONG Hollow Screw Wrench Sets provide detachable head wrenches, handles, extensions and ratchets for all hexagon socket hollow screws from 1/4 to 1 inch in diameter.



Made from Selected Grade Alloy Steel, gauged to accurate limits, heat treated and tested to assure maximum strength. Finished in chrome over nickel. These handles and parts will not spread or break. For complete description of handles and parts, see pages 156-167.

No.	LIST PRICE Each	Size Hexagon Key	Fits Safety Hollow Set Screws; Dia. Screw	Fits Socket Head Cap Screw; Dia. Screw	No.	LIST PRICE Each	Description
1/4" Square Drive					1/4" Square Drive		
NAL-4	\$0.60	1/8	1/4		NM-20A	\$1.02	Sliding T Handle
NAL-5	.60	5/32	5/16		NM-115	1.08	Extension
NAL-6	.60	3/16	3/8	1/4	3/8" Square Drive		
3/8" Square Drive					F-20-A	1.35	Sliding T Handle
AL-7	.75	7/32	7/16	5/16	FA-51	4.50	Reversible Ratchet
AL-8	.75	1/4	1/2		F-110	1.08	Extension
AL-10	.75	5/16	5/8	3/8 & 7/16	FM-130	.90	Adapter—3/8" Square Ho and 1/4" Square Plug
1/2" Square Drive					1 2" Square Drive		
AL-12	.85	3/8	3/4	1, 2 & 9/16	S-20-A	2.10	Sliding T Handle
AL-16	.85	1/2	7/8	5/8	SA-51	6.75	Reversible Ratchet
AL-18	.85	9/16	1	3/4 & 7/8	S-110-P	1.20	Extension
AL-20	.85	5/8		1			

Set No. AL-100—Consists of 1 each of all Sockets, Handles and Parts listed above—11 pieces.

Price, complete in fitted steel case\$25.00

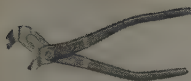
Set No. AL-50—Consists of 1 each of Nos. NAL-4, NAL-5, NAL-6, AL-7, AL-8, FA-51, F-20-A, F-110, NM-20-A, NM-115 and FM-130—11 pieces.

Price, complete in steel case\$13.00



ARMSTRONG SLIP-JOINT PLIERS

Drop Forged Steel



No. 1519 Ignition Pliers



No. 1520 Pump Pliers
No. 1521 General Purpose Pliers

ARMSTRONG Slip-Joint Pliers have been especially designed for use in close quarter operation. They are drop forged from selected grade alloy steel and are made with thin, narrow jaws. The bolt sturdily holds the jaws and assures maximum strength and rigidity.

IGNITION PLIER NO. 1519—These pliers are particularly suited for small, delicate work such as wiring, panel, switchboard and radio. They are 4-position and open from 0 to 9/16", jaws positioned parallel at most important openings. Finish is Chrome Plate.

PUMP PLIER NO. 1520—These general purpose pliers are long and slim for ease of operation and are suited for most jobs. They are 8-position type and open from 0 to 2". The handles are knurled for positive grip. Finish is Chrome Plate.

GENERAL PURPOSE PLIERS NO. 1521—Due to their heavier construction, these pliers are particularly suitable for plumbing and electrical work. They are 7-position type and open from 0 to 2". The handles are knurled for positive grip. Finish is Chrome Plate.

No.	Length	LIST PRICE Each
1519	4 1/2	\$1.85
1520	9 1/2	2.20
1521	10	4.45



ARMSTRONG HI-TEN AND ARMALLOY

Whitworth and Metric Standard Wrenches

The wrenches listed beneath are ordinarily carried in stock and can be furnished at regular prices.

No.	Fitting Whitworth Nut Size Bolt Inches	Metric Size Open-ends; m/m	No.	Fitting Whitworth Nut Size Bolt Inches	Metric Size Open-ends; m/m	No.	Fitting Whitworth Nut Size Bolt Inches	Metric Size Open-ends; m/m
HI-TEN Engineers' Single (See Pages 105-106)			HI-TEN Engineers' Double (See Pages 107-108)			HI-TEN Thin, Single End (See Page 111)		
S-000-D-M		5	24-A-M		11 & 14	609-W	7/8	
S-000-E-M		6	24-W	3/16 & 5/16	12 & 13	610-W	1	
00-F-M		7	25-F-M		12 & 14	HI-TEN Thin, Double End (See Page 112)		
00-M		8	25-M		13 & 15	623-M		10 & 12 & 13
00-G-M		9	25-B-M			623-A-M		
00-W	1/8		25-W	1/4 & 5/16	14 & 15	623-D-M		
0-M		10	26-M			623-W	3/16 & 1/4	
0-W	3/16		26-W	1/4 & 3/8	14 & 17	624-W	3/16 & 5/16	
1-A-M		11	27-B-M		16 & 17	625-W	1/4 & 5/16	
1-M		12	27-A-M			626-M		14 & 16
1-B-M		13	27-W	5/16 & 3/8	17 & 19	626-A-M		
1-W	1/4		28-M		18 & 19	626-W	1/4 & 3/8	
2-M		14	28-D-M		18 & 20	627-W	5/16 & 3/8	
2-B-M		15	28-W	5/16 & 7/16	17 & 19	628-W	5/16 & 7/16	
2-W	5/16		29-D-M		18 & 19	629-M		18 & 20
3-M		16	29-M		18 & 20	629-W	3/8 & 7/16	19 & 21
3-B-M		17	29-W	3/8 & 7/16	17 & 22	630-M		20 & 22
3-C-M		18	30-B-M		20 & 22	630-A-M		21 & 23
3-D-M		19	30-W	3/8 & 1/2	21 & 23	630-B-M		22 & 25
3-W	3/8		31-A-M		19 & 22	630-W	3/8 & 1/2	
4-M		20	31-M		20 & 22	631-W	7/16 & 1/2	
4-B-M		21	31-C-M		22 & 24	632-W	7/16 & 9/16	
4-W	7/16		31-W	7/16 & 1/2	22 & 25	633-W	1/2 & 9/16	
5-M		22	32-M		22 & 27	634-M		23 & 27
5-B-M		23	32-W	7/16 & 9/16	24 & 26	634-A-M		24 & 26
5-C-M		24	33-M		24 & 27	634-W	1/2 & 5/8	
5-W	1/2		33-A-M		25 & 28	635-M		26 & 29
6-M		25	33-W	1/2 & 9/16	27 & 32	635-A-M		28 & 30
6-B-M		26	34-C-M		28 & 30	635-W	9/16 & 5/8	
6-C-M		27	34-A-M		30 & 32	636-W	9/16 & 3/4	
6-W	9/16		34-W	1/2 & 5/8		637-W	5/8 & 3/4	
7-M		28	35-M			639-W	3/4 & 7/8	
7-B-M		29	35-W	9/16 & 5/8		ARMALLOY Engineers' Double (See Page 132)		
7-C-M		30	36-W	9/16 & 3/4		1721-M		6 & 7
7-W	5/8		37-A-M		32 & 36	1021-M		8 & 9
8-B-M		32	37-M		33 & 37	1723-M		10 & 11
8-C-M		33	37-C-M			1723-W	1/8 & 3/16	
8-W	3/4		37-W	5/8 & 3/4		1023-W	1/8 & 1/4	
9-M		34	38-W	5/8 & 7/8		1725-M		12 & 13
9-E-M		35	39-A-M		36 & 41	1725-W	3/16 & 1/4	
9-B-M		36	39-B-M			1025-W	1/4 & 5/16	
9-C-M		38	39-W	3/4 & 7/8		1727-M		14 & 15
9-W	7/8		40-W	3/4 & 1		1027-M		16 & 17
10-M		40	41-A-M			1027-W	1/4 & 3/8	
10-C-M		41	41-W	7/8 & 1		1027-A-W	5/16 & 3/8	
10-B-M		42	42-W	7/8 & 1 1/8		1029-M		18 & 19
10-W	1		43-W	1 & 1 1/8		1029-W	3/8 & 7/16	
11-M		45	44-W	1 & 1 1/4		1029-A-W	3/8 & 1/2	
11-W	1 1/8		45-W	1 1/8 & 1 1/4		1731-M		20 & 22
12-M		50	HI-TEN Thin, Single End (See Page 111)			1031-M		21 & 23
12-W	1 1/4		601-A-M		12	1031-W	7/16 & 1/2	
13-W	1 3/8		601-B-M		13	1033-M		24 & 26
14-W	1 1/2		601-W	1/4	14	1033-W	1/2 & 9/16	
HI-TEN Engineers' Double (See Pages 107-108)			602-M		15	1733-W	1/2 & 5/8	
21-A-M		6 & 7	602-B-M			1034-M		25 & 28
21-D-M		8 & 9	602-W	5/16		1037-M		27 & 30
21-C-M		8 & 10	603-W	3/8		1037-W	5/8 & 3/4	
21-W	1/8 & 3/16		604-W	7/16		1039-M		32 & 36
22-M		9 & 11	605-W	1/2				
22-C-M		10 & 11	606-W	9/16				
22-W	1/8 & 1/4		607-W	5/8				
23-M		10 & 12	608-W	3/4				
23-W	3/16 & 1/4							

Note—Whitworth also furnished in Hexagon Box, Construction, Structural, T Handle Socket, Offset Handle Socket, Long Thin, Tappet, Combination and Box Socket Patterns. Sizes and prices on application.



"ARMSTRONG BROS."

Better

PIPE TOOLS

"ARMSTRONG BROS." Better Pipe Tools are of standard types, but each is an improved tool with drop forged alloy steel or hardened parts wherever they will improve tool performance or add to tool life.

Efficiency is the basic quality built into every tool we make, and our trademark and name are recognized the world over by skilled mechanics as the guarantee of highest quality obtainable founded upon:

PRACTICAL EXPERIENCE

TECHNICAL KNOWLEDGE

MODERN PLANT AND EQUIPMENT

SCIENTIFIC METHODS

Over 55 years of experience as designers and makers of High Grade Tools, and our excellent system of Jigs, Gauges, Tests, and inspection insures our ability to deliver Pipe Tools of superior quality which will merit and hold the wide preference given ARMSTRONG Tools by skilled workers in other lines.

In ordering specify "ARMSTRONG BROS." Pipe Tools identified by the Arm and Hammer trademark.

The Mark



of Quality



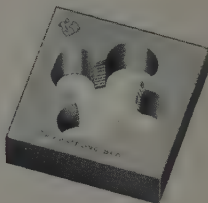
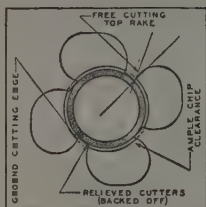
“ARMSTRONG BROS.” SOLID PIPE DIES

One Piece Vanadium Tool Steel

These Dies excel in easy cutting, long lasting qualities due to their improved design, superior material and excellent workmanship.

They are made from a solid piece of Vanadium Tool Steel. The Teeth are carefully hardened, drawn, tempered, tested and are cut at just the proper angle to give the best cutting rake. They are “backed off” to give clearance from the point of the cutting teeth.

This is the only cutter form which produces the easy cutting, uniformity and smoothness of a lathe cut thread. The improved shape of the body provides ample chip clearance, preventing “jamming” of the Die with resultant injury to both work and tools.



These Dies fit any stock of standard dimensions.

Furnished either right or left hand in sizes listed. Right hand American National Standard (Briggs) Dies will be sent if not otherwise specified in order. Each Die is boxed separately.

For selected sets complete with stock, see page 188.

For Stock No.	Dimensions of Dies	For Threading Pipe Size	LIST PRICE Each, * Right Hand	For Stock No.
0	2 x 2 x 1 1/2	1/8, 1/4, 3/8, 1/2	\$3.00	0
1	2 1/2 x 2 1/2 x 3/4	1/8, 1/4, 3/8, 1/2, 3/4, 1	3.50	1
1 1/2	3 x 3 x 3/4	1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2	4.60	1 1/2
2	4 x 4 x 7/8	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	5.40	2

*Left Hand Dies take double the list of Right Hand Dies.

Note—Dies for threading I.P.S. brass and copper pipe can be furnished when specified at prices listed above. These Dies are marked (Brass Pipe Only).

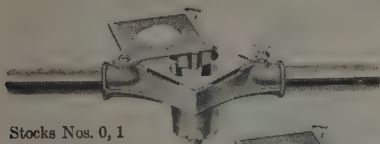


"ARMSTRONG BROS."

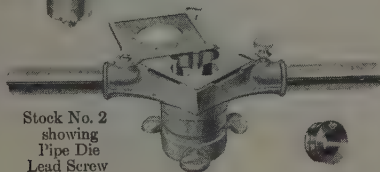
STOCKS FOR SOLID DIES

Improved Design

These Stocks will fit any solid pipe or bolt Die of standard dimensions. The bodies are certified malleable iron and finished in black baked enamel. Handles and retaining plates are smoothly burnished and finished in bright cadmium plate. The No. 2 pipe Stock is equipped with a lead screw, 11 1/2 pitch thread, as shown.



Stocks Nos. 0, 1
and 1 1/2



Stock No. 2
showing
Pipe Die
Lead Screw



Ring Guide

Stock Number	0	1	1 1/2	2
Approx Weight, Pounds	2 3/4	5 1/4	6 1/4	12 1/2
For Dies, Dimensions	2 x 2 x 1/2	2 1/2 x 2 1/2 x 3/4	3 x 3 x 3/4	4 x 4 x 7/8
Stock Complete without Dies or Guides	\$6.40	\$7.60	\$8.80	\$18.40
Ring Guides, Pipe or Bolt, each	.60	.80	1.20	1.50
Extra Lead Screws, each				4.00
Extra Handles, per pair	1.50	2.50	3.00	4.00
Extra Retaining Plates, each	.80	1.20	1.60	2.00
Extra Screws, each	.40	.60	1.00	1.00

For list prices of Dies, see pages 186 and 191.

For Stocks with selected sets of Dies, see pages 188 and 192.

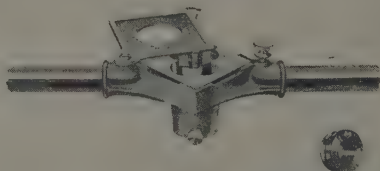


"ARMSTRONG BROS."

SOLID PIPE DIES IN SETS WITH STOCK

Vanadium Tool Steel Dies

Each set consists of one Stock, complete with an assortment of Dies and guides as listed. Right Hand American National Standard (Briggs) Dies will always be sent if not otherwise specified in order.



Ring Guide

Each set is packed individually in a wooden box with hinged cover.

Set No.	For Threading Pipe Size	Dimensions of Dies	LIST PRICE Set Complete With Ring Guides	Set No.
0	Any one size	2 x 2 x 1/2	\$ 8.70	0
0-2	1/2, 3/4	2 x 2 x 1/2	10.80	0-2
0-3	3/8, 1/2, 3/4	2 x 2 x 1/2	14.00	0-3
0-4	1/4, 3/8, 1/2, 3/4	2 x 2 x 1/2	17.30	0-4
0-4A	1/8, 1/4, 3/8, 1/2	2 x 2 x 1/2	17.30	0-4A
0-5	1/8, 1/4, 3/8, 1/2, 3/4	2 x 2 x 1/2	20.00	0-5
1	Any one size	2 1/2 x 2 1/2 x 3/4	10.80	1
1-2	1/2, 3/4	2 1/2 x 2 1/2 x 3/4	13.00	1-2
1-3	1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	16.20	1-3
1-4	3/8, 1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	19.40	1-4
1-5	1/4, 3/8, 1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	22.70	1-5
1-6	1/8, 1/4, 3/8, 1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	25.90	1-6
1 1/2	Any one size	3 x 3 x 3/4	14.00	1 1/2
1 1/2-2	3/4, 1	3 x 3 x 3/4	17.30	1 1/2-2
1 1/2-3	3/4, 1, 1 1/4	3 x 3 x 3/4	20.50	1 1/2-3
1 1/2-4	1/2, 3/4, 1, 1 1/4	3 x 3 x 3/4	24.80	1 1/2-4
1 1/2-5	3/8, 1/2, 3/4, 1, 1 1/4	3 x 3 x 3/4	29.10	1 1/2-5
1 1/2-6	1/4, 3/8, 1/2, 3/4, 1, 1 1/4	3 x 3 x 3/4	33.50	1 1/2-6
2-3	1 1/4, 1 1/2, 2	4 x 4 x 7/8	31.30	2-3
2-4	1, 1 1/4, 1 1/2, 2	4 x 4 x 7/8	36.70	2-4
2-5	3/4, 1, 1 1/4, 1 1/2, 2	4 x 4 x 7/8	42.10	2-5
2-6	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	4 x 4 x 7/8	47.50	2-6

For list price of Dies, Stocks and parts of same, see pages 186-187.

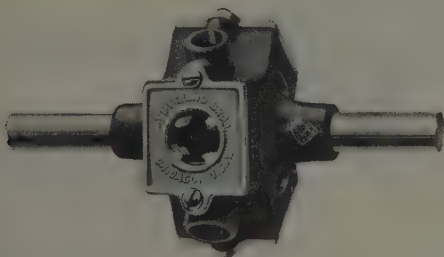


“ARMSTRONG BROS.”

TRIPLEX STOCK WITH SOLID PIPE DIES

Vanadium Tool Steel Dies

This Stock is very convenient for use under conditions where the range of the pipe used is limited to not more than three sizes and not over 1 inch; no loose bushings or guides are needed and Dies of the three sizes most used are always in place for instant use. It is light, well balanced and will soon repay its cost in time saved which is ordinarily lost in changing Dies and bushings or looking for them when misplaced. The body is certified malleable iron and finished in black baked enamel. Handles and retaining plates are smoothly burnished, and finished in bright cadmium plate.



Each set is packed individually in a wooden box with hinged cover.

No.	Dimensions of Dies 2 1/2 x 2 1/2 x 3/4	LIST PRICE Stock only Without Dies	LIST PRICE Extra Dies Right Hand *	LIST PRICE Set Complete	Set No.
1-T-A	3/8, 1/2, 3/4	\$13.20	\$3.50	\$21.40	1-T-A
1-T-B	1/2, 3/4, 1	13.20	3.50	21.40	1-T-B

*Left Hand Dies take double the list of Right Hand Dies.



"ARMSTRONG BROS."

REVERSIBLE RATCHET STOCKS with SOLID PIPE DIES

Vanadium Tool Steel Dies

This Stock is indispensable on certain classes of work such as threading pipe in awkward corners close up to a wall or other obstruction, in ditches, etc., and it will often save on a single job enough time to repay its cost. It fits any Die of the dimensions listed and any standard size guides for same. It is instantly reversible for backing the Die and by reversing the Die in the holder a thread can be cut on pipe projecting but an inch or two from the wall.

There is ample clearance for chips and the working parts are well protected from sand and dirt. The body is certified malleable iron and finished in black baked enamel. Retaining plate and handle are smoothly burnished and finished in bright cadmium plate.



Each set consists of one Reversible Ratchet Stock with an assortment of Dies and guides as listed. Right hand American National Standard (Briggs) Dies will always be sent if not otherwise specified in order. No. 2-R stock is equipped with a lead screw.

Each set is packed individually in a wooden box with hinged cover.

Set No.	For Threading Pipe Size	Dimensions of Dies	LIST PRICE Stock Only	LIST PRICE Extra Dies Right Hand *	LIST PRICE Set Complete	Set No.
1-R-3	1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	\$15.20	\$3.50	\$24.40	1-R-3
1-R-4	3/8, 1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	15.20	3.50	27.40	1-R-4
1-R-5	1/4, 3/8, 1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	15.20	3.50	30.40	1-R-5
1-R-6	1/8, 1/4, 3/8, 1/2, 3/4, 1	2 1/2 x 2 1/2 x 3/4	15.20	3.50	33.60	1-R-6
2-R-3	1 1/4, 1 1/2, 2	4 x 4 x 7/8	25.00	5.40	35.00	2-R-3
2-R-4	1, 1 1/4, 1 1/2, 2	4 x 4 x 7/8	25.00	5.40	38.00	2-R-4
2-R-5	3/4, 1, 1 1/4, 1 1/2, 2	4 x 4 x 7/8	25.00	5.40	43.00	2-R-5
2-R-6	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	4 x 4 x 7/8	25.00	5.40	48.00	2-R-6

*Left Hand Dies take double the list of Right Hand Dies.

Note—Extra Guides Pipe or Bolt for No. 1-R Stock \$0.80 list and for No. 2-R Stock \$1.50 list.

Note—Solid Bolt Dies, listed on page 191, can also be used in this Stock. For description and list prices of Solid Pipe Dies see page 186.



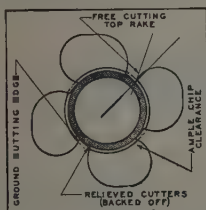
“ARMSTRONG BROS.” SOLID BOLT DIES

One Piece Vanadium Tool Steel

These Dies excel in easy cutting, long lasting qualities due to their improved design, superior material and excellent workmanship.

They are made from a solid piece of Vanadium Tool Steel. The Teeth are carefully hardened, drawn, tempered, tested and are cut at just the proper angle to give the best cutting rake. They are “backed off” to give clearance from the point of the cutting teeth.

This is the only cutter form which produces the easy cutting, uniformity and smoothness of a lathe cut thread. The improved shape of the body provides ample chip clearance, preventing “jamming” of the Die with resultant injury to both work and tools.



These Dies fit any Stock of standard dimensions.

In stock with American National Coarse (U. S. Std.) Thread. However, American National Fine (S. A. E. Std.) and Whitworth Standard right or left hand thread Dies can be furnished at special prices. Unless otherwise specified Dies with right hand American National Standard Coarse Thread (U. S. Std.), will be shipped. Each Die is boxed separately.

For selected sets complete with Stock, see page 192.

Stocks and guides for these Dies are listed on page 187.

For Stock No.	Dimensions of Dies	For Threading Bolts Diameter	LIST PRICE Each Right Hand *	For Stock No.
0	2 x 2 x 1/2	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4	\$3.20	0
1	2 1/2 x 2 1/2 x 3/4	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1 1/8, 1 1/4	4.40	1
1 1/2	3 x 3 x 3/4	3/4, 13/16, 7/8, 15/16, 1, 1 1/8, 1 1/4, 1 3/8, 1 1/2	5.40	1 1/2
2	4 x 4 x 7/8	1, 1 1/8, 1 1/4, 1 3/8, 1 1/2, 1 5/8, 1 3/4, 1 7/8, 2	7.50	2

*Left Hand Dies take double the list of Right Hand Dies.

List of Standard Bolt Threads

Diameter Bolts	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
N. C. (U. S. Standard).....	20	18	16	14	13	12	11	10	9	8	7
N. F. (S. A. E. Standard).....	28	24	24	20	20	18	18	16	14	14	12
Whitworth Standard.....	20	18	16	14	12	12	11	10	9	8	7



"ARMSTRONG BROS."

SOLID BOLT DIES IN SETS WITH STOCKS

Vanadium Tool Steel Dies

The Stocks in these sets are our regular pipe Stocks listed and described on page 187; the Dies are those described on page 191.



Unless otherwise specified Dies with right hand American National Standard Coarse Thread (U. S. Std.) will be shipped. However, American National Fine (S. A. E.) Standard, right or left hand thread Dies can be furnished at special prices.

Each set consists of one Stock complete with an assortment of Dies and guides as listed, packed individually in a wooden box with hinged cover.

Set No.	For Threading Bolts Diameter	Dimensions of Dies	LIST PRICE Set Complete
0-B-2	1/4, 5/16, 3/8, 7/16, 1/2	2 x 2 x 1/4	\$22.6
0-B-3	1/4, 3/8, 1/2, 5/8, 3/4	2 x 2 x 1/2	22.6
0-B-4	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	2 x 2 x 1/2	29.0
1-B-1	1/2, 5/8, 3/4, 7/8, 1	2 1/2 x 2 1/2 x 3/4	30.0
1-B-2	1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1	2 1/2 x 2 1/2 x 3/4	38.8
1-B-3	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	2 1/2 x 2 1/2 x 3/4	38.8
1-B-4	1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	2 1/2 x 2 1/2 x 3/4	38.8
1-B-5	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1	2 1/2 x 2 1/2 x 3/4	47.6
1-B-6	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	2 1/2 x 2 1/2 x 3/4	56.4
1 1/2-B-13	3/4, 1, 1 1/4, 1 1/2	3 x 3 x 3/4	32.0
1 1/2-B-23	3/4, 7/8, 1, 1 1/8, 1 1/4, 1 1/2	3 x 3 x 3/4	42.0

For extra Guides, see page 187.

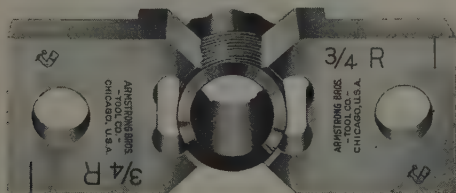
For list of Standard Bolt Threads, see page 191.



“ARMSTRONG BROS.” ADJUSTABLE PIPE DIES

Made of Special Vanadium Tool Steel with Backed Off Chasers. In these Dies are incorporated every desirable feature, among which are the following: Correct Cutting Angle or Rake “Backed Off” Chasers or Cutting Teeth; Correct Throat Angle; Ample Chip Clearance made of Special Vanadium Tool Steel. These Dies are easy to start on the pipe, cut easy and fast, and back off smoothly without jamming or tearing.

Our modern hardening and tempering methods and equipment together with the exceptionally high quality of material and rigid inspection and tests insure maximum wear and service.



Our Dies fit any Stock adapted for this type of Die and are furnished either right hand or left hand in the sizes listed.

In stock for American National Standard (Briggs) and British (Whitworth) Standard threads. Unless otherwise specified right hand American National Standard (Briggs) Thread Dies will be shipped. Each Die is boxed separately.

For selected sets complete with Stock, see page 195.

For Stock No.	For Threading Pipe Size	Width Die	LIST PRICE Per Pair Right Hand	For Stock No.
1-A	1/8, 1/4, 3/8, 1/2, 3/4	1	\$ 3.20	1-A
2-A	1/8, 1/4, 3/8, 1/2, 3/4, 1	1 1/2	4.00	2-A
2 1/2-A	1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2	1 3/4	5.00	2 1/2-A
2 1/2-A	1/2 & 3/4, 1 & 1 1/4 (Double End Dies)	1 3/4	7.20	2 1/2-A
3-A	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	2 1/2	7.20	3-A
6-A	2, 2 1/2, 3	3 5/8	17.00	6-A

*Left Hand Dies take double the list of Right Hand Dies.

Note—Dies for threading I.P.S. brass and copper pipe can be furnished when specified at prices listed above. These Dies are marked (Brass Pipe Only).



“ARMSTRONG BROS.” STOCKS FOR ADJUSTABLE DIES

These Stocks, while adapted for the use of any standard Die of this type, are of improved design presenting a smooth compact body, without sharp edges or ribs, which fits snugly and comfortably into the hand. The bodies are certified malleable iron, carefully machined, and are finished in black baked enamel. Handles are smoothly burnished and finished in bright chromium plate.



Ring Guides are always furnished unless adjustable is specified.

Stock Number	1-A	2-A	2 1/2-A	3-A	6-A
Stock Complete, without Dies or Guides	\$6.60	\$8.00	\$10.60	\$14.00	\$72.00
Adjusting Guides, Pipe or Bolt, each	.60	.80	1.20	1.50	4.00
Adjustable Pipe Guides	5.60	6.00	7.20	9.60	
Extra Handles, per pair	1.50	2.50	2.50	5.00	14.00
Extra Wrenches, each	.40	.50	.50	.60	.60
Extra Collar Screw, each	.50	.60	.70	1.00	1.40
Extra Guide Screw, each	.40	.60	.60	1.00	1.20
Extra Adjusting Screw, each	.40	.50	.70	.80	1.00

For list prices of Dies, see page 193.

For Stocks with selected sets of Dies, see page 195.



“ARMSTRONG BROS.” ADJUSTABLE PIPE DIES IN SETS WITH STOCKS

The Dies in these sets are made from Special Vanadium Tool Steel with “backed off” chases making them easy cutting and long lasting.



Adjustable
Pipe Guide

Ring Guide

Each set consists of one Stock complete with an assortment of Dies and guides as listed and a drop forged wrench. American National Standard (Briggs) right hand Dies will always be sent unless otherwise specified in order. Ring Guides are standard equipment; Adjustable Guide furnished *only* when specified.

Each set is packed individually in a wooden box with hinged cover.

Set No.	For Threading Pipe Size	LIST PRICE Set Complete		Set No.
		With Adjustable Guides	With Ring Guides	
1-A	Any One Size		\$10.00	1-A
1-A-2	3/8, 1/2		12.40	1-A-2
1-A-3	3/8, 1/2, 3/4		15.20	1-A-3
1-A-4	1/8, 1/4, 3/8, 1/2		18.00	1-A-4
2-A	Any One Size	\$16.00	12.00	2-A
2-A-2	1/2, 3/4	18.00	14.00	2-A-2
2-A-3	1/2, 3/4, 1	21.50	17.50	2-A-3
2-A-4	3/8, 1/2, 3/4, 1	25.00	21.00	2-A-4
2-A-5	1/4, 3/8, 1/2, 3/4, 1	28.00	24.00	2-A-5
2-A-6	1/8, 1/4, 3/8, 1/2, 3/4, 1	32.00	28.00	2-A-6
2 1/2-A-2	1/2 & 3/4, 1 & 1 1/4	33.00	28.00	2 1/2-A-2
2 1/2-A-4	1/4, 3/8, 1/2 & 3/4, 1 & 1 1/4	43.00	38.00	2 1/2-A-4
2 1/2-A-5	1/2, 3/4, 1, 1 1/4, 1 1/2	38.00	33.00	2 1/2-A-5
2 1/2-A-6	3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2	43.00	38.00	2 1/2-A-6
3-A	Any One Size	29.80	23.80	3-A
3-A-2	1 1/2, 2	36.40	30.30	3-A-2
3-A-3	1 1/4, 1 1/2, 2	42.50	36.40	3-A-3
3-A-4	1, 1 1/4, 1 1/2, 2	48.60	42.50	3-A-4
3-A-5	3/4, 1, 1 1/4, 1 1/2, 2	54.60	48.60	3-A-5
3-A-6	1/2, 3/4, 1, 1 1/4, 1 1/2, 2	60.70	54.70	3-A-6
6-A-2	2 1/2, 3		100.00	6-A-2

*1/2 and 3/4, 1 and 1 1/4 Dies in No. 2 1/2-A and No. 2 1/2-A-4 sets are double end Dies. For list price of Dies, Stocks and parts of same, see pages 193 and 194.



“ARMSTRONG BROS.”

REVERSIBLE RATCHET STOCK WITH ADJUSTABLE PIPE DIES

“ARMSTRONG BROS.” Adjustable Ratchet Stocks are exceptionally useful for threading pipe in most out of the way places—close to walls, in corners, under limited working space.

This set will thread from 1/8" to 1" pipe as well as many kinds of Bolts, Rods and Tubing. The stock can be used with any similar dies of standard dimensions. The stock is instantly reversible for backing off the die.

The body is certified malleable iron and finished in black baked enamel. Handle is smoothly burnished and finished in bright cadmium plate.



Each set consists of one reversible ratchet stock with an assortment of dies and guides as listed. Unless otherwise specified Right Hand American National Standard (Briggs) Thread Dies will be shipped.

Each set is packed individually in a wooden box.

Set No.	For Threading Pipe Size	Width Die	LIST PRICE Extra Bushings	LIST PRICE Extra Dies Right Hand Per Pair*	LIST PRICE Stock Only Less Dies and Bushings	LIST PRICE Set Complete
2-BR-3	1/2, 3/4, 1	1 1/2	\$0.80	\$4.00	\$16.00	\$25.60
2-BR-4	3/8, 1/2, 3/4, 1	1 1/2	.80	4.00	16.00	28.60
2-BR-5	1/4, 3/8, 1/2, 3/4, 1	1 1/2	.80	4.00	16.00	31.60
2-BR-6	1/8, 1/4, 3/8, 1/2, 3/4, 1	1 1/2	.80	4.00	16.00	35.60

*Left Hand Dies take double the list of Right Hand Dies.

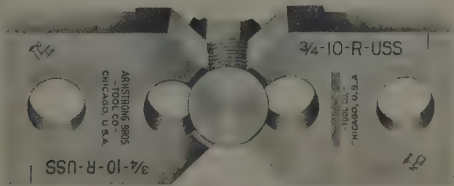
For list price of Dies, and parts of same see pages 194 and 195.



“ARMSTRONG BROS.” ADJUSTABLE BOLT DIES

Made of Special Vanadium Tool Steel with “backed off” chasers. In these Dies are incorporated every desirable feature, among which are the following: Correct Cutting Angle or Rake; “Backed Off” Chasers or Cutting Teeth; Correct Throat Angle; Ample Chip Clearance; Made of Special Vanadium Tool Steel. These Dies are easy to start, cut easy and fast and back off smoothly without jamming or tearing.

Our modern hardening and tempering methods and equipment together with the exceptionally high quality of material and rigid inspection and tests insure maximum wear and service.



These Dies fit any stock of standard dimensions.

In stock with American National Coarse (U. S. Std.) Thread. However, American National Fine (S. A. E. Std.) and Whitworth Standard right or left hand thread Dies can be furnished at special prices. Unless otherwise specified Dies with right hand American National Standard Coarse Thread (U. S. Std.), will be shipped. Each Die is boxed separately.

For selected sets complete with stock, see page 198.

Stocks and guides for these Dies are listed on page 194.

For Pipe Stock No.	For Threading Bolts Diameter	Width of Die	LIST PRICE Per Pair Right Hand *	For Pipe Stock No.
1-A	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4	1	\$ 4.00	1-A
2-A	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	1 1/2	5.20	2-A
3-A	1, 1 1/8, 1 1/4, 1 3/8, 1 1/2, 1 5/8, 1 3/4, 1 7/8, 2	2 1/2	12.00	3-A

*Left Hand Dies take double the list of Right Hand Dies.

List of Standard Bolt Threads

Diameter Bolts	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
N. C. (U. S. Standard).....	20	18	16	14	13	12	11	10	9	8	7	7
N. F. (S. A. E. Standard).....	28	24	24	20	20	18	18	16	14	14	12	12
Whitworth Standard.....	20	18	16	14	12	12	11	10	9	8	7	7



"ARMSTRONG BROS." ADJUSTABLE BOLT DIES IN SETS WITH STOCKS

The Stocks in these sets are our regular pipe Stocks listed and described on page 194 and the Dies described and listed on page 197.



Unless otherwise specified Dies with right hand American National Standard Coarse thread (U. S. Std.) will be shipped. However, American National Fine (SAE) Std. and Whitworth Standard, right or left hand thread Dies can be furnished at special prices.

Each set consists of one Stock complete with an assortment of Dies and guides as listed; packed individually in a wooden box with hinged cover.

Set No.	For Threading Bolts Diameter	LIST PRICE Set Complete	Set No.
1-AB-2	1/4, 5/16, 3/8, 7/16, 1/2	\$28.00	1-AB-2
1-AB-3	1/4, 3/8, 1/2, 5/8, 3/4	28.00	1-AB-3
1-AB-4	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	36.00	1-AB-4
2-AB-1	1/2, 5/8, 3/4, 7/8, 1	36.00	2-AB-1
2-AB-2	1/4, 3/8, 1/2, 5/8, 3/4, 7/8, 1	48.00	2-AB-2
2-AB-3	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	48.00	2-AB-3
2-AB-4	1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	48.00	2-AB-4
2-AB-5	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1	60.00	2-AB-5
2-AB-6	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, 1 1/4	72.00	2-AB-6
3-AB-1	1, 1 1/4, 1 1/2, 1 3/4, 2	80.00	3-AB-1
3-AB-2	1, 1 1/8, 1 1/4, 1 1/2, 1 3/4, 2	92.00	3-AB-2

For extra guides, see page 194.

For list of Standard Bolt Threads, see page 197.

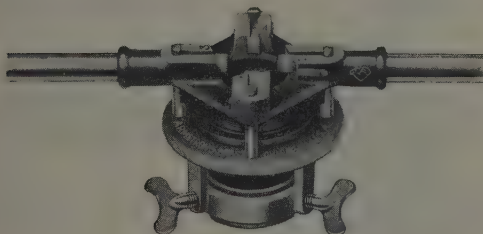


"ARMSTRONG BROS." RECEDING THREADER No. 1

For Threading 1" to 2" Pipe

This improved Threader operates on the "receding Die" basic principle and cuts perfect threads of 1" to 2" sizes with a minimum of effort. The body is Certified Malleable Iron and finished in black baked enamel. The handles are polished all over and finished in bright cadmium plate.

"ARMSTRONG BROS." Chasers are made of Special Vanadium Tool Steel and are carefully hardened, drawn, tempered and tested. For complete description, see page 203.



Each Threader is furnished complete in a wooden box including four sets of Chasers for threading 1", 1 1/4", 1 1/2" and 2" pipe and with either ring guides or self-centering pipe holder. Right hand American National Standard (Briggs) Chasers will always be sent unless otherwise ordered.

No.	For Threading Pipe Size	LIST PRICE Extra Handles Per Pair	LIST PRICE Ring Guides Each	LIST PRICE Extra Chasers Per Size	LIST PRICE Complete
1	1, 1 1/4, 1 1/2, 2	\$3.50	\$0.70	\$4.00	\$35.00



"ARMSTRONG BROS."

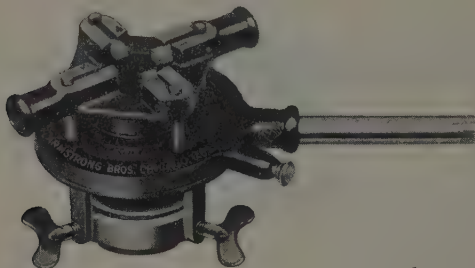
RECEDING RATCHET THREADER No. 1-A

For Threading 1" to 2" Pipe

This Threader is equipped with a reversible Ratchet and will thread 1" to 2" pipe with speed and precision in confined or difficult positions. The Ratchet will rotate the stock when the working arc is limited to only 10 degrees.

When conditions do not require the Ratchet, this Threader may be used as a two handled stock similar to the No. 1 Threader described on page 199 and to which it is similar in other respects. Extra handle for this purpose is included. The body is certified malleable iron and finished in black baked enamel. The handles are polished and finished in bright cadmium plate.

"ARMSTRONG BROS." Chasers are made of Special Vanadium Tool Steel and are carefully hardened, drawn, tempered and tested. For a complete description, see page 203.



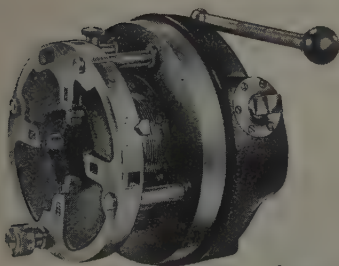
Each Threader is furnished complete in a wooden box including four sets of Chasers for threading 1", 1 1/4", 1 1/2" and 2" pipe and with either ring guides or self-centering pipe holder. Right hand American National Standard (Briggs) Chasers will always be sent unless otherwise ordered.

No.	For-Threading Pipe Size	LIST PRICE Extra Handles Per Pair	LIST PRICE Ring Guides Each	LIST PRICE Extra Chasers Per Size	LIST PRICE Complete
1-A	1, 1 1/4, 1 1/2, 2	\$3.50	\$0.70	\$4.00	\$42.00



“ARMSTRONG BROS.”

NO. 165 PORTABLE POWER PIPE THREADER



Driven by
any standard
1/2" electric
drill



An easier,
faster, better way
to thread 1" to 2" pipe

The “ARMSTRONG BROS.” NO. 165 Portable Power Pipe Threader has been designed to operate with any 1/2" electric drill. It is sturdy in construction, compact in design and can be easily taken to the job as it only weighs 26 lbs. All moving parts run on anti-friction bearings for ease of operation and long life.

This machine is equipped with one set of High Speed Steel Chasers, Right Hand American National Standard (Briggs), which are easily adjusted by a cam plate index lever to thread 1", 1 1/4", 1 1/2" or 2" pipe. The pipe holder is unique in design; has positive grip; is easily adjusted.

Each “ARMSTRONG BROS.” NO. 165 Portable Power Pipe Threader is furnished in a wooden box complete with one set of High Speed Steel Chasers, right hand American National Standard (Briggs), and drive adapter.

No.	For Threading Pipe Size	List Price Extra Drive Adapters Each	List Price Extra Chasers Set (Four)	List Price Complete
165	1, 1 1/4, 1 1/2, 2	\$1.30	\$6.50	\$135.00



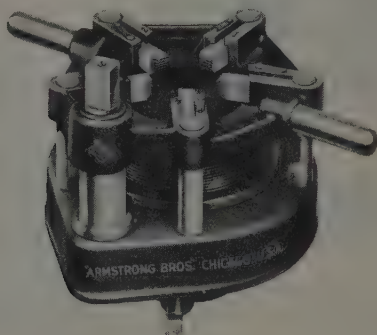
“ARMSTRONG BROS.”

GEARED RECEDING THREADER No. 2

For Threading 2½" to 4" Pipe

This Threader operates through reduction gears which enable one man to thread 2 1/2" to 4" pipe with ease. The body is Certified Malleable Iron and finished in black baked enamel. The Handles are polished and finished in bright cadmium plate.

“ARMSTRONG BROS.” Chasers are made of Special Vanadium Tool Steel and are carefully hardened, drawn, tempered and tested. For complete description, see page 203.



Each Threader comes complete with four sets of Chasers for threading 2 1/2", 3", 3 1/2" and 4" pipe, one each 2 1/2", 3", 3 1/2" and 4" Guides, one Set Screw Wrench and an “all steel” Ratchet Handle.

Each complete Threader is furnished in a well built wooden box.

No.	For Threading Pipe Size	LIST PRICE Extra Ratchet Handle Complete	LIST PRICE Extra Lifting Handles Each	LIST PRICE Extra Set Screws Each	LIST PRICE Extra Guides Each	LIST PRICE Extra Chasers Per Size	LIST PRICE Threader Complete
2	2 1/2, 3, 3 1/2, 4	\$12.00	\$2.15	\$0.35	\$3.10	\$10.00	\$150.00



"ARMSTRONG BROS." CHASERS

For Receding Post Type Pipe Threaders
For Threading 1" to 4" Pipe

These Chasers are made of Special Vanadium Tool Steel. The cutting teeth are carefully hobbed and "backed off" for clearance. Each die segment is plainly marked with cutting size and number.

Hardened, drawn, tempered and tested, ARMSTRONG BROS. Chasers are extra free cutting and accurate in every respect. They are standard in outside dimensions and will fit other makes of stocks intended for this type of die.



Chasers for
No. 2 Geared
Threader



Chasers for
Nos. 1 and 1-A
Threaders

Each set of Chasers is furnished complete in a wire clip. Unless otherwise ordered, Right Hand American National Standard (Briggs) Chasers will always be sent.

For list and description of No. 1 and No. 1-A Threaders, see pages 199-200; No. 2 Threader is described on page 202.

For Threader (Stock No.)	For Threading Pipe (Size)	LIST PRICE Chasers Per Size	For Threader (Stock No.)
1 & 1A 2	1, 1 1/4, 1 1/2, 2 2 1/2, 3, 3 1/2, 4	\$ 4.00 10.00	1 & 1A 2

Note—High Speed Steel Chasers can be furnished. Prices on application.

SELF CONTAINED DIE STOCK CHASERS

For Threading 1" to 2" Pipe



ARMSTRONG BROS. Self Contained Die Stock Chasers will fit Nos. 65 and 85 series Rigid type Threaders or ARMSTRONG BROS. NO. 165 Portable Power Threader. They are made of High Speed Steel. The cutting teeth are carefully hobbed and "backed off" for clearance. Each die segment is hardened, drawn, tempered, tested and is plainly marked with cutting size and number.

LIST PRICE PER SET (4 CHASERS) \$6.50

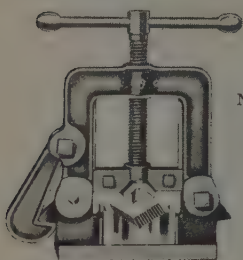
For list and description of No. 165 Portable Power Threader see page 201.



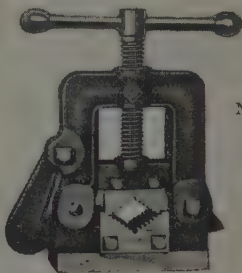
"ARMSTRONG BROS." STANDARD PIPE VISES

Bench Type

These Vises are of improved design and superior workmanship. They are automatic locking and combine convenient weight with strength and quick action. The frame and base are made of certified malleable iron. The jaws are tool steel carefully milled, hardened, tempered and tested. The hooks are drop forged of steel and guaranteed against breaking. The Body is finished in black baked enamel. The Jaws, Screw and Handle are finished in bright cadmium plate.



Nos. 700
70
71



Nos. 72
73
74
75

Nos. 700, 70 and 71 come equipped with "one piece" full length jaws. These one piece jaws grip the pipe along its entire length thus eliminating the possibility of bending small size pipe and tend to eliminate marring of pipe.

No.	Holds Pipe	LIST PRICE Extra Jaws Per Set	LIST PRICE Each Complete	No.
700*	1/8 to 1 1/2	\$ 3.80	\$ 9.20	700
70*	1/8 to 2	4.60	10.80	70
71*	1/8 to 2 1/2	4.60	12.80	71
72	1/8 to 3 1/2	6.50	19.20	72
73	1/8 to 4 1/2	9.20	26.70	73
74	1/8 to 6	15.40	60.00	74
75	1 to 8	22.00	122.00	75

*With Full Length Jaws.



“ARMSTRONG BROS.” OPEN SIDE PIPE VISE

For Bench or Post

Within its range this Vise combines all the desirable features, strength, quick action, convenience of operation and solid gripping power. The body is certified malleable iron. Screw and handle are steel. The jaws are tool steel with milled teeth and are carefully heat treated, oil tempered and tested. The Body is finished in black baked enamel; Jaws, Screw and Handle in bright cadmium plate.



Chain Attachment

By means of the chain attachment, this Vise can be solidly fastened to any post, telephone pole, tree or like support. The steel proof-tested chain passes through the body of the Vise eliminating the use of hooks or lugs where the strain is greatest. The wedge is certified malleable iron.

Unless otherwise specified, each Vise will be furnished with chain attachment, complete.

No.	Holds Pipe Size	LIST PRICE Extra Jaws Set of Three	LIST PRICE Chain Attachment only	LIST PRICE Vise only	LIST PRICE Complete
10	1/8 to 2	\$5.00	\$7.50	\$12.00	\$19.50



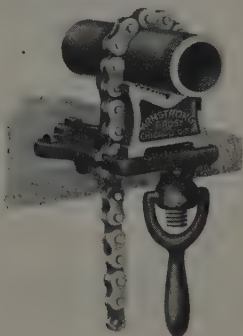
“ARMSTRONG BROS.” CHAIN PIPE VISE

Drop Forged Steel—Hardened Jaws
For Holding Pipe, Rods, Bolts, etc. $\frac{1}{8}$ to 8 in diameter

This Vise is extremely compact, convenient and quick in action. It combines maximum strength and capacity with minimum weight and is especially well adapted for use on outside jobs as it can very handily be carried in tool bag or chest and is easily attached to either post or bench.

The Base, Handle and Jaws are drop forged of selected quality steel. The Jaws are heat treated and tempered for file sharpening. Chains are the same high quality chains manufactured as furnished on our ARMSTRONG BROS. Chain Tongs. They are manufactured by us in our own plant and are fully guaranteed as are all other parts of ARMSTRONG BROS. Chain Vises.

The Jaws of numbers 1-C and 2-C are drop forged in one piece. This design not only is the most solid construction but also gives a full support between the jaws for holding small size pipe, thus eliminating the possibility of bending small size pipe and also the marring of pipe. These important features are found only on the “ARMSTRONG BROS.” Chain Vise.



Above illustration shows the drop forged One-Piece Jaws of the 1-C and 2-C ARMSTRONG BROS. Chain Pipe Vises giving full support for small size pipe.

Nos. 1-C, 2-C and 3-C are furnished in individual cartons; No. 4-C furnished in individual wooden box.

No.	Holds Pipe Size	LIST PRICE Jaws Pair	LIST PRICE Chain with Screw*	LIST PRICE Screw Only	LIST PRICE Handle With Nut	LIST PRICE Nut Only	LIST PRICE Each Complete	No.
1-C	$\frac{1}{8}$ to 2*	\$ 3.00	\$ 2.50	\$ 0.80	\$ 2.20	\$ 1.40	\$ 7.00	1-C
2-C	$\frac{1}{4}$ to 4	7.00	4.80	1.40	4.20	2.70	15.00	2-C
3-C	$\frac{1}{4}$ to 6	12.00	9.00	2.50	7.00	4.00	27.00	3-C
4-C	$\frac{1}{4}$ to 8	18.00	12.00	2.50	7.00	4.00	36.00	4-C

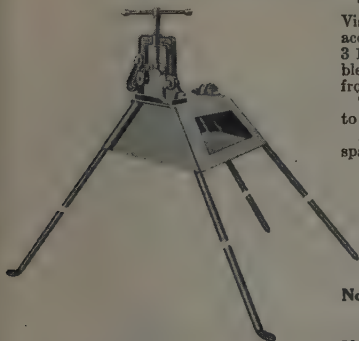
*Will grip pipe fittings having a diameter equal to diameter of $2\frac{1}{4}$ -inch pipe.

Screws will be sent with chains unless “chain only” is specified.



ARMSTRONG BROS." PIPE VISE STAND

With Pipe Bender



The ARMSTRONG BROS. 4-legged Pipe Vise Stand is of sturdy construction built to accommodate standard types of Vises up to 3 1/2" in capacity. It can be quickly assembled or disassembled and is easily carried from job to job.

The legs are rigid and are correctly spread to insure steadiness at all times.

A large solid shelf provides ample storage space for oil cans, dies, cutters, etc.

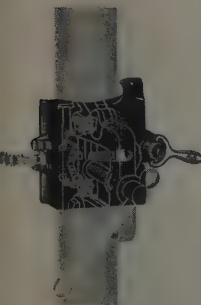
LIST PRICE

No. 471—Complete with No. 71 one piece full length Jaw Vise and four legs.....\$52.80

No. 4—Complete with legs but no vise..... 40.00

ARMSTRONG BROS." PIPE VISE SADDLE

For Holding Pipe Vises



By means of its Flat Link Chain this portable pipe vise base attaches instantly to round or square posts. Its wide range, handiness and sure grip on round steel posts as well as on wood posts of any shape make this a device long needed by plumbers, steamfitters and electricians:

The body is Certified Malleable Iron and it is slotted to hold rigidly all standard make vises in the popular styles and sizes.* The tightening handle is drop forged and has a hardened steel nut; the flat link chain is the same high quality chain furnished in our chain pipe vises. Standard chain is 27 inches long and extra length chain can be furnished on specification.

Each Pipe Vise Saddle is furnished complete with bolts, nuts and washers for attaching vises, packed in a wooden box.

No.	Length Chain	LIST PRICE Each	No.
50	27	\$12.00	50

The following "ARMSTRONG BROS." Pipe Vises can be used with the No. 50 Pipe Vise Saddle:

Nos. 700, 70, 71, 72*....."Standard" Pattern described on page 204.
No. 10....."Open Side" Post Vise described on page 205.
No. 1-C*, 2-C*....."Chain Vise" Pattern described on page 206.

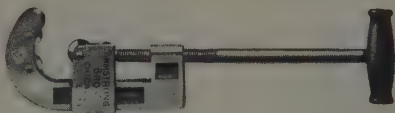
*Special fitting required; no extra charge for fitting Pipe Vise Saddle when furnished with vise.



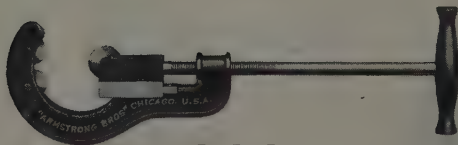
“ARMSTRONG BROS.” 3-WHEEL PIPE CUTTERS

(Barnes Type)

These Pipe Cutters are very convenient on general work and are indispensable when cutting under conditions where the cutter cannot be revolved entirely around the pipe. The body is of Certified Malleable Iron. Pins are tool steel carefully hardened. The cutter wheels are made from a special alloy tool steel; they are carefully hardened and heat treated to insure maximum strength and efficiency. Parts are interchangeable with similar parts of other standard makes. Finish—Nos. 1-B and 2-B are burnished bright and clear lacquered with black enamel handle. Nos. 3-B, 4-B and 5-B—The body and handle are finished in black baked enamel, the screw is polished and clear lacquered.



1-B, 2-B



3-B, 4-B, 5-B

Nos. 1-B and 2-B are packed in individual boxes.

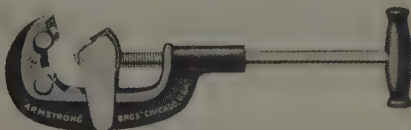
Cutter No.	Capacity	LIST PRICE Pins Dozen	LIST PRICE Wheels Each	LIST PRICE Complete	No.
1-B	1/8 to 1 Pipe	\$1.80	\$0.90	\$ 9.40	1-B
2-B	1/2 to 2 Pipe	1.80	1.00	12.60	2-B
3-B	1 1/2 to 3 Pipe	1.80	1.40	21.00	3-B
4-B	2 1/2 to 4 Pipe	3.60	1.70	42.00	4-B
5-B	4 to 6 Pipe	3.60	1.90	63.00	5-B



"ARMSTRONG BROS." STANDARD PIPE CUTTER

(Saunders Type)

This Pipe Cutter can be used to advantage wherever working conditions permit of revolving the cutter entirely around the pipe; only one cutter wheel is used and the action of the two hardened rollers eliminates almost entirely the burr raised by the cutter wheel. Screws bear on hardened tool steel insert. The point of the screw is hardened. Parts are interchangeable with similar parts of other standard makes. Body and Handle finished in black baked enamel; other parts burnished bright and finished in clear lacquer.



Nos. 1-S and 2-S are packed in individual boxes.

No.	Capacity	LIST PRICE Pins Dozen	LIST PRICE Rollers Each	LIST PRICE Wheels Each	LIST PRICE Each Complete	No.
1-S	1/8 to 1 Pipe	\$2.40	\$0.40	\$0.90	\$ 7.70	1-S
2-S	1 to 2 Pipe	2.40	.60	1.00	11.60	2-S
3-S	2 to 3 Pipe	3.60	1.00	1.90	19.00	3-S
4-S	2 1/2 to 4 Pipe	3.60	1.00	1.90	38.50	4-S
5-S	4 to 6 Pipe	3.60	1.00	1.90	57.50	5-S

"ARMSTRONG BROS." TUBE CUTTER

With Sliding "Spring Lock" Safety Reamer
For all thin-wall tubing up to 1" O. D.



"ARMSTRONG BROS." Tube Cutter are especially useful for Garage, Oil Burner and Refrigeration work. They are of streamlined design and accurately aligned for better balance and greater cutting precision. They are "Rust Proof" finish. The wheels are extra thin "razor edge" which assure faster easier cutting and practically no burr.

—LIST PRICE

No. 100 Tube Cutter complete.	\$2.40 ea.
Extra Wheels.	.45 ea.
Extra Wheel Pins.	1.30 doz.

PACKAGING

Standard Package Quantity Tube Cutters
Standard Package Quantity Extra Wheels

“ARMSTRONG BROS.”

DROP FORGED PIPE CUTTER

Trimmo Type

The body of this Pipe Cutter is of drop forged one-piece construction. The screw runs through a case hardened nut which takes up all wear and which can be easily replaced after long service.

The Pins and Rollers are made of tool steel carefully machined and hardened. The cutter wheels are of improved shape made from a special alloy tool steel and are hardened and heat treated.

This Pipe Cutter can be used with one cutter wheel and two rollers, or with three cutter wheels.

Furnished with two rollers and one cutter wheel unless otherwise ordered.

Parts are interchangeable with similar parts of other standard makes.



Nos. 1-T and 2-T packed in individual boxes

No.	Capacity	LIST PRICE Nuts Each	LIST PRICE Rollers Each	LIST PRICE Pins with Cutter Pins Dozen	LIST PRICE Wheels Each	LIST PRICE Complete	No.
1-T	1/8 to 1 1/4 Pipe	\$0.80	\$0.60	\$2.40	\$1.20	\$ 9.40	1-T
2-T	1/4 to 2 Pipe	.80	.60	2.40	1.20	12.60	2-T
3-T	1 to 3 Pipe	.90	.80	3.60	1.80	21.00	3-T

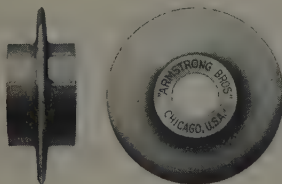


"ARMSTRONG BROS." KNIFE BLADE CUTTER WHEELS

Fitting Standard Pipe Cutters Cadmium Finish

Our Cutter Wheels are made from selected Alloy Tool Steel accurately machined, heat treated, hardened and oil tempered.

These thin, sharp cutter wheels hold their cutting edge longer and cut very much faster and cleaner with less power than is the case when using ordinary old style wheels made from common steel.



Alloy Tool Steel

Type of Pipe Cutter	No. 1 LIST PRICE Each	No. 2 LIST PRICE Each	No. 3 LIST PRICE Each	No. 4 LIST PRICE Each	No. 5 LIST PRICE Each
Saunders.....	\$.90	\$1.00	\$1.90	\$1.90	\$1.90
Barnes.....	.90	1.00	1.40	1.70	1.90
Nye.....	.80	1.00			
Trimo.....	1.20	1.20	1.80	1.80	
Rigid.....	1.00	1.00	1.70	1.70	
ARMSTRONG BROS. 3-Wheel.....	.90	1.00	1.40	1.70	1.90
ARMSTRONG BROS. Standard.....	.90	1.00	1.90	1.90	1.90
ARMSTRONG BROS. Drop Forged.....	1.20	1.20	1.80		

Note -Special wheels for cast iron or extra heavy steel pipe can be furnished when desired. The price of these wheels will be 50% higher than the price of standard wheels as listed on this page.

"ARMSTRONG BROS." RATCHET PIPE REAMER

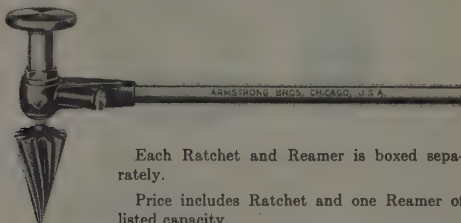
**Drop-Forged, Ball Bearing Action
Cadmium Finish**

This is a high grade general service Ratchet Reamer for removing burrs caused by cutting pipe.

The Ratchet is drop forged of steel, while the spindle, gear, nut and reversing jigger are machined from steel and hardened throughout. The handle is standard half inch pipe, polished, and is removable. The applied pressure when using this Ratchet Reamer bears on a ball bearing which makes this Reamer very easy to operate.

The Reamers themselves are of spiral fluted design and are drop forged of high grade tool steel, milled, ground and hardened.

The Reamer cannot drop out of the Ratchet socket, yet can be instantly released.



Each Ratchet and Reamer is boxed separately.

Price includes Ratchet and one Reamer of listed capacity.

No.	Capacity Pipe	Extreme Length Approx.	LIST PRICE Extra Ratchets	LIST PRICE Complete	No.
122	1/8 to 1	18	\$15.00	\$17.50	122
122 1/2	1/4 to 1 1/4	18	15.00	18.00	122 1/2
124	1/4 to 2	18	15.00	21.00	124

Extra Reamers

No.	Capacity Pipe	Style of Shank	LIST PRICE Each	No.
42	1/8 to 1	Bit Brace	\$2.50	42
42 1/2	1/4 to 1 1/4	Bit Brace	3.00	42 1/2
44	1/4 to 2	Bit Brace	6.00	44



"ARMSTRONG BROS." PIPE WRENCH

Drop Forged—All Steel

Cadmium Finish

When your hand grips an "ARMSTRONG BROS." Pipe Wrench it thrills to the feel of the perfect balance resulting from correct design and accurate proportions, and as you continue to use it day after day you will more and more appreciate its exceptional strength, simplicity and efficiency.



The patented "ball and socket" nut gives increased flexibility and vastly greater strength, especially under heavy side strain, which is so destructive to the ordinary wrench frame.

Side pull strain is taken up by two solid forged steel lugs which are reinforced or tied together by the recessed nut, a construction which combines compact form with its greatest possible strength.

The novel spring action insures proper gripping position to the movable jaw and imparts just sufficient tension to prevent it getting out of adjustment.

Adjusting nut cannot fall out. This is an exclusive and convenient feature which will be appreciated by pipe fitters who have had to hunt for the "fixins" after taking the jaw out of the old style wrenches.

The handle does not act inside a frame and is therefore, not restricted in size, but is so designed as to be strongest at the point of greatest strain and there is no projecting part below line of handle.

The inserted lower jaw is of select tool steel and properly hardened to give long life to the teeth. The handle and the movable jaw are drop forged alloy steel.

All parts are absolutely self-cleaning in action, with no chance to clog or gum up.

Length	Capacity	LIST PRICE Handles	LIST PRICE Yoke	LIST PRICE Jaw or Yoke Pin	LIST PRICE Nut	LIST PRICE Spring Asm.	LIST PRICE Insert Jaw	LIST PRICE Movable Jaw	LIST PRICE Complete
8 inch	1/8 to 3/4 inch	\$1.25	\$0.15	\$0.03	\$0.25	\$0.05	\$0.55	\$0.70	\$2.20
10 inch	1/8 to 1 inch	1.75	.20	.04	.30	.06	.65	1.10	2.85
14 inch	1/4 to 1 1/2 inch	2.45	.35	.04	.45	.07	.85	1.50	3.85
18 inch	1/4 to 2 inch	3.50	.55	.04	.60	.08	.95	2.15	5.50
24 inch	1/4 to 2 1/2 inch	5.65	.80	.04	.80	.10	1.10	3.50	9.50
36 inch	1/4 to 3 1/2 inch	11.50	1.10	.05	1.40	.12	1.50	5.70	20.00

“ARMSTRONG BROS.” CHAIN PIPE TONGS

**With Double Ended Reversible Jaws
Drop Forged**

The ARMSTRONG BROS. Reversible-Jaw Pipe Tongs have double ended jaws which may be quickly changed, end for end, if the teeth become burred or dull from long use. This feature gives double life the service of “two tools for the price of one.”



THE JAWS are Drop Forged from special high carbon steel, carefully milled, heat treated, hardened and tested for toughness and lasting qualities.

THE HANDLES are forged from spring steel selected to give the required stiffness.

THE CHAINS are Proof-Tested. Attached to each is a leaden seal—evidence of proven strength. This seal, bearing the “ARMSTRONG BROS.” Trade Mark, indicates that the chain has been tested to 2/3 of catalog strength (From 1,200 lb. to 40,000 lb.).

With “ARMSTRONG BROS.” Pipe Tongs you are certain of strength beyond your greatest needs—a proved safety factor on which you can rely in any emergency.

With Flat Link Chains Only

No.	*For Pipe, Size Inches	Approx. Length	Flat Chain Length	Breaking Strain, Lbs.	LIST PRICE Extra Chain	LIST PRICE Extra Jaws Pair	LIST PRICE Extra Nuts & Studs for Jaws, Per Set	LIST PRICE Complete
30	1 8 to 3/4	13 3/4	9 1/2	3,600	\$1.50	\$2.00	\$0.40	\$5.00
31	1 8 to 1 1/2	20	13 1/2	6,700	2.00	3.50	.50	7.00
32	1 4 to 2 1/2	27	17 1/2	9,800	3.00	5.50	.70	10.00
33	3/4 to 4	37	22 1/2	12,500	5.00	8.00	.90	14.00
33 1 2	1 to 6	44 1/2	32	14,300	7.00	9.50	1.10	18.00
34	1 1/2 to 8	50 1/2	40 1/2	15,700	9.00	11.00	1.40	22.00
35	2 to 12	64 1/2	55 1/2	21,800	15.00	15.00	1.80	36.00
*16	4 to 18	87	74 1/2	40,000	40.00	32.00		80.00

*Wrenches for pipe sizes larger than 12 inches are supplied only in the non-reversible jaw form. See page 215.



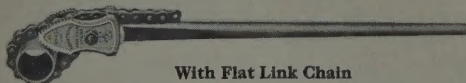
“ARMSTRONG BROS.” CHAIN PIPE TONGS

Drop Forged—Single End Jaw

This Chain Pipe Wrench is so designed as to embody the best features of its type and also to eliminate some of the weak points which extensive use and exhaustive tests have developed in other makes.

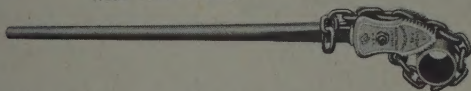
By means of the greatly increased bearing of jaw sockets upon the bar, combined with the extra large hardened steel bolt, the jaws are held solidly in place under the most severe use.

The bolt is extra large and the shackle or connecting link is drop forged from Chrome-Nickel Steel.



With Flat Link Chain

With Cable Chain



The **HANDLES** are forged from high carbon steel and have the stiffness and “spring” needed to stand up under hard service.

The **JAWS** are drop forged from special steel, treated, hardened and tested for toughness and lasting qualities.

The **CHAINS** are best quality and each flat link chain is Proof-Tested to two-thirds of catalog strength. To each chain after it is Proof-Tested is attached a leaden seal bearing our trade mark. Every wrench bearing this seal has an established safety-factor on which the user can rely. Flat link chains will be shipped unless otherwise specified.



No.	Capacity: Size Pipe	Approx. Length	Flat Link Chain, Length	Breaking Strain, Lbs.	Cable Chain, Length	Breaking Strain, Lbs.	LIST PRICE Extra Chain	LIST PRICE Extra Jaws, Pair	LIST PRICE Extra Bolt and Nut Per Set	LIST PRICE Com- plete
10	1/8 to 3/4	14	9 1/2	3,600	9 3/4	1,200	\$ 1.50	\$ 2.00	\$ 0.28	\$ 5.00
11	1/8 to 1 1/2	20	13 1/2	6,700	14 1/2	4,000	2.00	3.50	.36	7.00
12	1/4 to 2 1/2	27	17 1/2	9,800	18	6,000	3.00	5.50	.46	10.00
13	3/4 to 4	37	22 1/2	12,500	27	10,500	5.00	8.00	.60	14.00
13 1/2	1 to 6	44	32	14,300	33 1/2	12,500	7.00	9.50	.70	18.00
14	1 1/2 to 8	51	40 1/2	15,700	42	15,000	9.00	11.00	.90	22.00
15	2 to 12	65	55 1/2	21,800	57	19,000	15.00	15.00	1.30	36.00
16	4 to 18	87	74 1/2	40,000	76	40,000	40.00	32.00	2.50	80.00



“ARMSTRONG BROS.” IDEAL CHAIN TONGS

For Pipe, Fittings, and Flanges



THE JAWS have straight teeth for pipe and V shaped teeth for fittings. Drop forged from special high carbon steel carefully milled, heat treated, hardened and tested for toughness and lasting qualities.

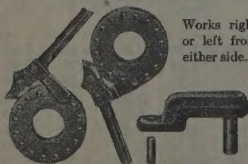
THE HANDLES are forged from spring steel selected to give the required stiffness.

THE CHAINS are proof-tested. Attached to each Flat Link Chain is a leaden seal—evidence of proven strength. This seal, bearing the ARMSTRONG BROS. Trade Mark, indicates that the chain has been tested to $\frac{2}{3}$ of catalog strength. (From 9,800 lb. to 21,800 lb.)

Ideal Chain Tongs will be furnished with flat link chain (as illustrated) unless cable chain is specified.

Wrench Number	2	3	4	5
Capacity: Size Pipe	1/2 to 3 1/2	1 to 5	1 to 8	2 to 12
Size Fittings	1/2 to 3	1 to 4	1 to 6	2 to 10
Approx. Length	27	38	49	61
Flat Link Chain: Length inches	17 1/2	22 1/2	32	50
Breaking Strain, Lbs.	9,800	12,500	14,300	21,800
Cable Chain: Length, inches	21	28	36	51
Breaking Strain, Lbs.	9,000	12,500	14,300	21,800
LIST PRICE Complete	\$10.00	\$14.00	\$18.00	\$36.00
LIST PRICE Extra Chain	3.00	5.00	7.00	15.00
LIST PRICE *Extra Jaws, Pair	5.00	8.00	9.50	15.00
LIST PRICE Extra Studs and Nuts, per Set	.70	.90	1.10	1.80
LIST PRICE Extra Pins, Each	.15	.20	.25	.35

*If single jaw only is wanted, specify right or left.



Works right
or left from
either side.

IDEAL FLANGE LINK

The Ideal Flange Link consists of a special cast steel link and pin. It is readily attached to the Ideal Chain Wrench in place of the chain.

For Wrench Number	2	3	4	5
Capacity: Size Flange	1 to 4	2 to 6	2 to 8	4 1/2 to 16*
LIST PRICE Flange Link	\$6.00	\$8.00	\$10.00	\$19.00
LIST PRICE Extra Pins	.80	.90	1.00	1.10

*4 1/2 to 20 and 4 1/2 to 24 sizes for No. 5 Wrench also available.



W8-APS-339

